VOL 54 THIRD SERIES NUMBER 2 DECEMBER 1946

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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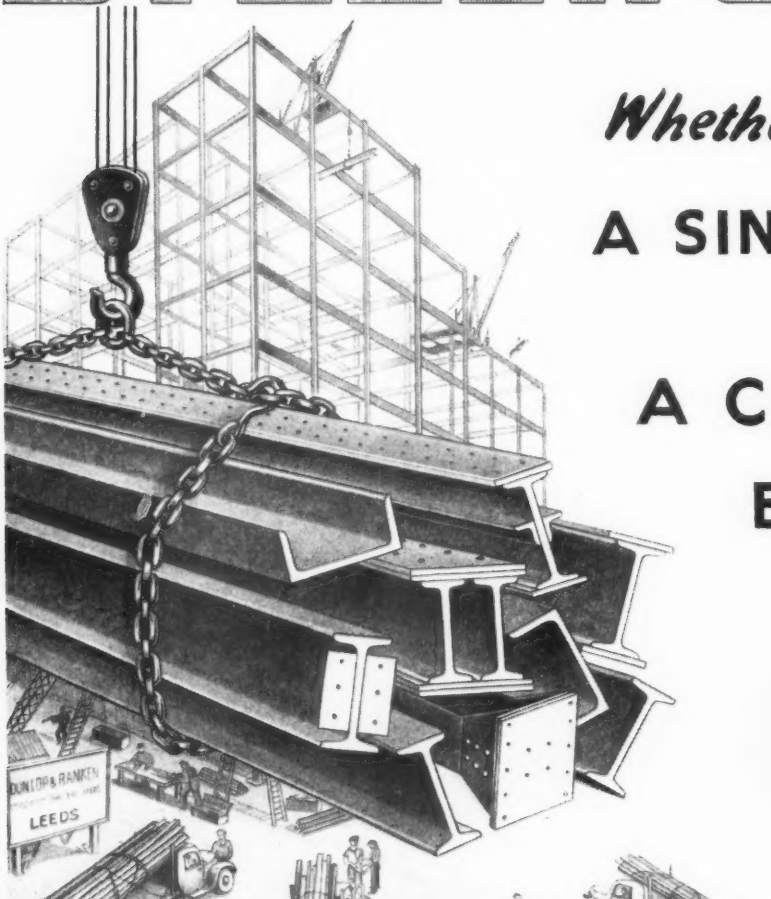

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JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

3rd Series No. 2] DECEMBER 1946 [Vol. 54

CONTENTS

	PAGE		PAGE
JOURNAL	61	THE SEVERN BRIDGE	95
THE PRESIDENT'S INAUGURAL ADDRESS	63	PRACTICE NOTES	96
"FUEL AND THE FUTURE"—MINISTRY OF FUEL AND POWER CONFERENCE. PART II	69	NOTES AND NOTICES (INCLUDING COMPETITIONS)	98
FESTIVAL OF ST. LUKE THE EVANGELIST	85	SCHOOLS AND STUDENTS	101
EXHIBITION OF SWEDISH FURNITURE	86	NOTES FROM THE MINUTES OF THE COUNCIL	102
KIDBROOKE GOVERNMENT TRAINING CENTRE	88	BOOK REVIEWS	103
NEW YEAR NONSENSE	89	CORRESPONDENCE	105
BUILDING INDUSTRIES NATIONAL COUNCIL THIRD BUILDING CONGRESS	93	OBITUARIES	105
		MEMBERSHIP LISTS	106
		MEMBERS' COLUMN	107

Journal

The Architects' Benevolent Society

The A.B.S., the architectural profession's own charity, holds a right to lead this column of the JOURNAL in the nearest approach we can at present make to a Christmas number. A society such as this must of necessity work quietly and confidentially. The recipients of its grants—some once well known, some never fortunate—are people who have fallen by the wayside and who are in dire need, or who have been dependent upon members of the profession who have died and left them without means.

The A.B.S. ought to be able to answer all genuine calls for help at Christmastime, but its reserves are negligible, and at this time of year the need for its efforts is urgent.

The President, Mr. L. H. Keay, O.B.E., in addressing a Christmas appeal to all members, says :

> "I know how many calls are made at this time of year, but I make a personal appeal to every member of the profession to send me at least one half-crown and as much more as can be spared. We never miss the help we give to others and we have a special obligation to relieve the distress of those in whose name I ask for a generous contribution to the funds of the Society."

The President has led the way by a generous donation of £10 10s.

Contributions to this worthy fund should be addressed to the President, A.B.S., 66 Portland Place, W.1.

Farewell to the Swiss Exhibition

The Swiss Exhibition, which closed on 26 October, broke all records of attendance at R.I.B.A. architectural exhibitions. It was visited by just over 14,000 persons, a number exceeded only by "Everyday Things" in 1936 which, of course, was not an architectural exhibition. The amount of Press and radio comment has been gratifying, culminating in a long Third Programme talk by Howard Robertson [*F.*], at the special request of the B.B.C. One comment by an architect, heard in the exhibition, perhaps sums it up as well as any other criticism. He said that both the exhibition and the architecture were "good, clean fun," and went on to amplify that somewhat cryptic remark by saying that technically both were good, that they were clean, direct and purposeful and that they were not devoid of gaiety and charm. The two young Swiss architects, Mr. Hirt and Mr. Kung, who attended the exhibition at the R.I.B.A., in order to show visitors round, took the opportunity to remain in this country a few days longer to see some examples of British town planning. They visited Bristol and Coventry, where they were the guests of the City Architects.

Appointment of Assistant Secretary, R.I.B.A.

The Council have appointed Mr. William Robert Francis Ellis, O.B.E., T.D., M.A., to the post of Assistant Secretary R.I.B.A. Born in 1906, Mr. Ellis was educated at Cheltenham College, where he won an Exhibition in Classics to Cambridge University and, changing to science, obtained a Natural Science Tripos in 1928.

After eleven years as a master at Downside School, he volunteered for the Army in 1939 and obtained a short-service commission as Adjutant of a newly-formed infantry battalion. He served in France until Dunkirk and was then appointed G.S.O.3. He worked on the planning staff of the Madagascar Expedition and the North Africa Expedition, during which time he was appointed D.A.A.G.

After the campaign in Tunisia he was selected for the planning staff for the Sicilian landing and appointed A.A.G. (Lieut.-Colonel), accompanying 15th Army Group H.Q. to the island. He held the post of Assistant Adjutant-General, Allied Force H.Q., C.M.F. from February 1943 to May 1945, being Mentioned in Despatches (1943) and awarded the O.B.E. (1944).

From May to September 1945, Mr. Ellis was seconded to the Education Branch Allied Commission for Austria. After demobilisation he was appointed to a post in the Lord Chancellor's office, deputising as Establishment Officer for the Supreme Court until February 1946, when he became Assistant Secretary of Commissions.

The Annual Dinner

The Council have decided to hold the first post-war Annual Dinner at the R.I.B.A. on Friday, 21 March 1947. Full particulars will be published in due course ; meanwhile members are asked to refrain from writing to the Secretary for tickets.

R.I.B.A. London Architecture Bronze Medal

In this number of the JOURNAL will be found a loose slip announcing that the Council have reinstated the annual award of the London Architecture Bronze Medal. In normal times the award is for " the building of the year," but for the 1946 medal only, the period has been increased to the ten years ending 31 December 1946. Before the war the London Architecture Medal was an annual event which always attracted a notable amount of Press and public attention.

R.I.B.A. Journal Numbers in 1947

A recent increase in the paper ration allows us to begin to return to the fortnightly publication, of pre-war days. The increase does no more than allow a *beginning*. It is therefore proposed to publish sixteen numbers in 1947, that is, an extra one in each quarter. It has been provisionally arranged to publish the four extra numbers in January, April, July and October which will therefore have two numbers, the remaining months continuing to have one. It must be explained that this arrangement is provisional and may have to be altered as events develop during the year. It is, however, unlikely that there will be more than sixteen numbers, the hope of a further increase in the paper ration being remote in the present state of national trade and production. So far as next January is concerned members may expect one number in the middle of the month and one at the end.

The increase in paper ration has fortunately coincided with the Royal Institute's return to full peace-time activity in the present session. Had it not done so, considerable difficulty would have been experienced in making the JOURNAL properly representative of R.I.B.A. activities and some of the newer features would have had to be severely curtailed or even omitted. As things are we shall have to watch the allocation of space with some care. For example, the series of articles on Swedish architecture which started in October will be published as opportunities arise.

Journal Subscription

Recent heavy increases in the cost of printing, blocks and paper has necessitated raising the charge to non-members for subscription to and for single copies of the JOURNAL. A brief announcement to this effect was made on p. 58 of the November JOURNAL. From the beginning of Volume 54 in November 1946 the charge to subscribers will be 2s. 6d. per issue ; annual subscription £2. For probationers and members of Allied Societies who are not members of the R.I.B.A., the annual subscription will be £1 5s.

Lectures on Office Organisation

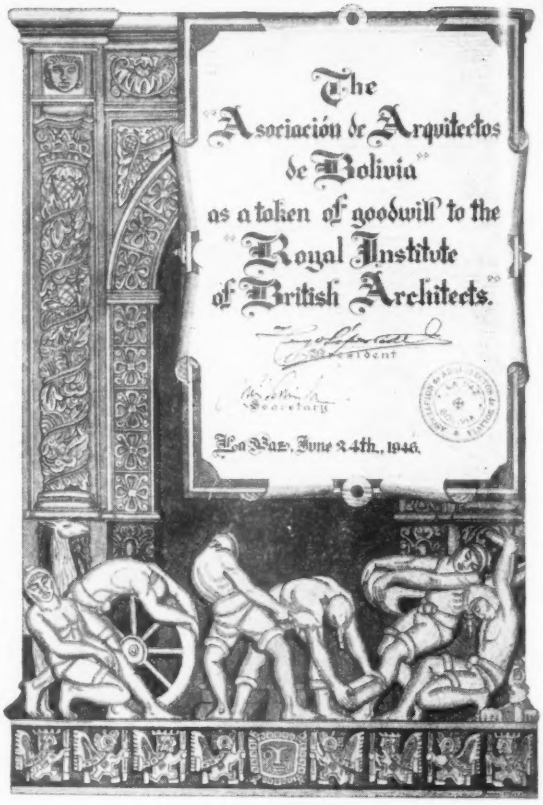
The third lecture in the series on Office Organisation will take place on Tuesday, 4 February 1947, at 6.30 p.m. The subject is " Partnership and Profit-Sharing," and the speakers will be : Mr. G. Grenfell Baines [*A.*], Mr. Raglan Squire [*F.*], and Mr. H. V. Lobb [*F.*], who will take the chair.

For the convenience of members coming straight from their offices, a buffet will be available for light refreshments from 6-6.30 p.m. Reprints of the first lecture in the series are available, price 6d.

U.N.E.S.C.O. Exhibition, Paris

An exhibition has been held in Paris in connection with the first General Conference of the United Nations Educational, Scientific and Cultural Organisation from 19 November to 10 December.

In collaboration with the British Council, the R.I.B.A. prepared a small exhibition, within the framework of the larger exhibition, entitled " British Architecture—1939-1946," mainly based on the " Building Now " Exhibition held in April of this year and designed briefly to illustrate some of the essential building and planning executed in this country by British architects between 1939 and 1946. The Exhibition will be illustrated and described in the first issue of the January R.I.B.A. JOURNAL.



Token of Goodwill by Bolivian Architects

At the lunch preceding the Council Meeting on 15 October, Senor Hugo Lopez-Videla, a leading architect of Bolivia, lecturer at the La Paz University and technical adviser to the Ministries of Defence and Public Health in Bolivia, presented on behalf of the Association de Arquitectos de Bolivia the above diploma of goodwill to the Institute. The President, Mr. L. H. Keay, O.B.E., receiving the Diploma on behalf of the Council, warmly thanked Senor Lopez-Videla and reciprocated, on behalf of the Institute, the expression of goodwill.

Fuel Conference Reprints

The report of the " Fuel and the Future " conference, which is concluded in this number of the JOURNAL, is being reprinted in pamphlet form. Copies can be obtained on application to the Secretary R.I.B.A., price 2s. 6d. post free. This report is a full summary of the architectural aspects of modern heating technique, particularly in houses.

The Cover Illustration

Salisbury Cathedral, by Herbert Felton, F.R.P.S., taken from an exhibition of photographs of English Cathedrals at the Ilford Galleries.

R.I.B.A. Diary

Tuesday, 14 Jan. 6 p.m. General Meeting. Prizes, Deed of Award, Criticism.

Tuesday, 28 Jan. 6 p.m. General Meeting. *New Towns.* Professor W. G. Holford, M.A., B.Arch.(Lvpl.), A.M.T.P.I. [*A.*].

Wednesday, 5 Feb. 6 p.m. A.S.B. Lecture. *Noise Abatement.* Hope Bagenal, D.C.M. [*F.*].

Tuesday, 11 Feb. 6 p.m. General Meeting. President's address to Students. Presentation of Medals and Prizes.

Tuesday, 25 Feb. 6 p.m. General Meeting. *Urban Housing—Planning for Amenity.* Edward Armstrong [*F.*].

THE INAUGURAL ADDRESS

BY THE PRESIDENT, MR. L. H. KEAY, O.B.E., M.Arch.

Read before the Royal Institute of British Architects on Tuesday 12 November, 1946

It is eight years since a President of this Institute has delivered an inaugural address. So far as I have been able to ascertain, except that it should be read, nothing is laid down as to the form such an address should take, but on this occasion I imagine you will anticipate a review of current events and appreciate brevity. I would first ask your indulgence for a brief reference to myself and to those who, like myself, fill official appointments.

For the first time in the long history of this Royal Institute you have elected as your President one whose whole career has been spent in the service of various local authorities. Lest any should be apprehensive as to the advisibility of such a selection, I hasten to give an assurance that it will be my earnest endeavour to maintain the dignity of the office and to preserve the traditions associated with it.

In the years to come, my name, unlike that of many of my distinguished predecessors, will not be associated with any great masterpiece of architecture. The early days of my career were spent working as one of a team engaged upon the limited work then entrusted to the local authorities of this country. In more recent years it has been my lot to act as the leader of such a team and to accept responsibility for the extended operations now devolving upon the larger municipalities. I am in fact a member of that much maligned class known as the "Bureaucrats." I would, however, add in self-defence that I am not of recent vintage.

This institute, with the catholicity to be expected of it, does not differentiate between those who serve a private individual and those who elect to work as a servant of the community. Its function is to ensure that all who are admitted to its ranks are qualified to discharge satisfactorily the responsibilities they accept. Any who would attempt to divide our ranks do disservice to the Institute, for its strength depends upon the closest co-operation of all its members. No one worked harder to ensure this co-operation than my immediate predecessor, Sir Percy Thomas, who we are glad to see with us to-night.

In the eight years which have elapsed since the last Inaugural Meeting the whole world has suffered from the effect of war and devilry. Buildings which were of great architectural merit, now stand ruined or reduced to rubble. Our ranks have suffered casualties and the normal intake of younger men into the profession has been considerably reduced. The great Building Industry with which we are so closely associated has suffered an upheaval unparalleled in its history.

The revival of this Inaugural Meeting is indicative of our desire to resume full activity and to play our part in reconstruction and expansion. As briefly as I can I should like to recall the conditions of the immediate pre-war period and to suggest some of the guiding principles which should govern our work in the future. I should like to refer, also, to the necessity of inculcating among the people a more general appreciation of the Fine Arts and particularly of Architecture.

I am naturally anxious, at a time like this, when we must work together in a spirit of co-operation for the greater good of all, to avoid raising any matters which might arouse controversy. It is difficult, however, not to refer to fashion or to styles, but I hope that if I do so I shall not give offence to those who feel less bound to tradition than I do. If I remember rightly, more than one President during the decade before the War sounded a warning in his address against the acceptance of a machine-made architecture and an excess of functionalism which might lead to the complete abandonment of our traditional methods of building. Most of the buildings designed immediately before the war showed that we had withstood the first shock of extreme modernism and that we were settling down to a period of gradual evolution. We had borrowed a little from the Continent. For instance, some of our buildings showed the influence of the best Dutch and Swedish work. Little objection could be taken to this dissemination of good design if it was adaptable to our needs. After all we marched to victory on the shores of Northern Africa to the strains of "Lili Marlene", which we borrowed from the Germans. The period I have referred to was one in which the standard of design was showing a marked and progressive improvement.

If I may refer to the work in which I was then more parti-

cularly interested there was evidence of distinct improvement in the standard of small house design. But there was still much that was of poor quality in the piecemeal and unrelated developments of private enterprise and of many local authorities who were operating without skilled architectural advice. Those who had learnt the lessons which only practical experience can teach, and realised the effect of restrictions resulting from timid legislation and ministerial regulation, began to speak of community planning. The building of houses in great numbers involved the preparation of a layout and the design of all the ancillary buildings necessary in a complete development. We remembered that we were both Architects and Planners and that we must be called upon to assist in the initial stages of a development if it was to attain success.

In the decade of which I speak the move towards a greater measure of equality was gaining speed, but with it a wave of materialism was spreading. For many years the influence of those early patrons of the Arts—the Church and the great householders—had been on the wane. Our potential clientele was increasing, but it was often the quantity rather than the quality of our work that seemed to count. The opportunities of designing great monumental buildings were becoming fewer. We had recently passed through a financial crisis and economy was still in the air. But economy led to simplicity and simplicity often resulted in greater dignity and beauty. A building of outstanding design made us intolerant of the ugliness of its neighbours. The development of a model housing estate made us more conscious of the horrors of slumdom. It was at this time when a clear desire for improvement was becoming more evident that we were plunged first into a year of fear and inaction and then into the dark days and years of war.

I need not recall all the difficulties of the war years, but I do express the hope that in the long run we shall benefit, as we usually do, from the experience gained in them and the greater fellowship enjoyed. But contrary to the hope of many, our difficulties have not melted away with the dawn of peace. We are still securely bound by a multitude of restrictions. I know it will be a disappointment to some if I do not take this opportunity of uttering a "peppery" condemnation of the many controls which are hampering our progress. I shall say no more than this. Some measure of control is essential, but I am sometimes wicked enough to wonder whether the interests of the country would not be better served if the energies of many of those who control were diverted to the production of some of those components which, owing to present shortage, are delaying building progress.

Looking ahead, we see how the shortage of trained and experienced men will affect the quality of work and the speed at which it will be expected to be undertaken. This difficulty is common to all the crafts. Youth gave of its best to protect us and in so giving lost those valuable years of training in which knowledge is more easily assimilated. We need the vitalising influence of youth at a time when many of the older and more experienced men are tired. It is for us to devise some scheme by which we may make our experience available to the younger men in the profession and when they launch out upon their first architectural adventure we must extend to them the hand of encouragement and fellowship.

We are all aware of the nature and quantity of the work which lies ahead. Full employment in the Building Industry would seem to be guaranteed for the next half century. This should encourage cheerfulness and optimism in craftsmen who hitherto have feared the consequences of periods of unemployment and hardship. But this optimism will not be shared generally if the cost of production continues to rise without any corresponding increase in the rate of production, a condition which, if allowed to continue, may lead to many of our great building schemes being stillborn. There are too the pessimists who jeer at the very preparation of these schemes at a time when the world faces the imminent peril of self-destruction. These may not be matters for us. Our concern is that we should be able to keep pace with the output of work which will be required of the Building Industry. We may well be apprehensive lest the greater haste demanded will result in the loss of individuality in design and a lowering of the standard of craftsmanship. A world in which individuality is restricted will be a sorry place for the Englishman and more particularly for those who happen to be architects.

Because standardisation and mass-production must ultimately ensure more rapid output, the advantages of their adoption will be stressed by those to whom the urgency of finding a solution of our problems appeals more strongly than the manner in which we solve them. I do not for one moment suggest that we should oppose standardisation merely because it is standardisation. In many spheres it is long overdue and if it can be followed by the mass production of certain essential components of better design and giving higher efficiency it will be for the greater good, for it will bring within the reach of all many of the essentials which otherwise would be available only to the few. But to-day those who are interested in the production of the machine are tempting the tired and poorly fed craftsmen by offering to produce mechanically those things which hitherto only his skilled hands could fashion. It has been said that for every two steps we advance technically we slip back one artistically. If this be so it surely points to the necessity for the closest collaboration between the craftsman and all those technicians who are devoting their abilities to novel forms of building and the manufacture and processing of equipment.

I referred to the increasing field of our clientele. This should follow from a wider distribution of wealth and a system of education in which there is an opportunity of attaining an appreciation of the Fine Arts. If this could be made possible we should secure for the people of to-day what was regarded as an essential in the equipment of the well-to-do in the eighteenth century. Unfortunately where this knowledge exists to-day outside our own profession it is often of an antiquarian rather than of a practical nature. It is for that reason that opposition to new ideas which cut across deep rooted traditions so often comes from the powerfully entrenched quarters of those who defend the old without any real ability to analyse and rightly assess its claim for beauty.

I am prompted to seek your answer to a question I often ask myself. Is the ability to appreciate the beautiful innate in us or, if not, can it be acquired by training or by the influence of environment? It is certainly not confined to any one section of society, though the degree of possession or the ability to develop it may vary considerably. You may think my question of little importance, but with every opportunity for building comes an obligation to add to the beauty of town and countryside. We shall be less likely to fail in the discharge of this responsibility if we have to face the criticism, not only of our professional colleagues, but also of a wider and more informed public. It is important too for another reason. We are living at a time when there is a tendency amongst some to ridicule traditions, when many of the little dignities of life are regarded as examples of servility and emotions prompted by the Arts as signs of weakness. It is essential that we should carry the mass of the people with us in our attempt to build a better Britain and we should take steps to secure opportunities for the development of architectural appreciation generally so that everyone who can may possess the ability to discern between the good and the bad and to recognise beauty, dignity and good proportion in our buildings.

A few weeks ago I attended, as one of your representatives, the festival of St. Luke which was held in the Church of St. Margaret's at Westminster. I could not help feeling that the opening words of the first processional hymn written by that gallant veteran of the Church, Canon S. A. Alexander, "Blow the Trumpets," was a direct challenge to our profession to indulge in a little discreet advertising, for in this hymn we were bidden to give thanks for "all the magic and the wonder" of the arts and for the work of craftsmen, and the beauty of "all that with their hands they fashion." I left the Church of St.

Market's with the feeling that the blowing of the Architectural Trumpet might be for the good of the world.

As you know, it has been decided to revive the award of the London Architecture Bronze Medal. Some provincial cities are reviving their awards, but it has often occurred to me that it would be to the general good if our allied societies published from time to time a Record of Current Architecture, giving illustrations of a number of the best examples of the many varieties of buildings erected in their districts, with brief reasons for their inclusion as buildings worthy of note. To avoid any charge of advertising anonymity could be preserved. Such an authoritative publication if widely circulated might increase the desire amongst the people for a fuller understanding of architecture in particular and of the Fine Arts in general. We should be "Blowing our Trumpet" without transgressing any Code of Practice.

If we could feel assured of a steady and sufficient intake of trained men and of having to face an informed and critical public, I think we could face the future with confidence, excitement and joy in our work. For a time we shall be subject to the restrictions which shortages will necessitate. Many are growing tired of the austerity imposed in the name of utility. As evidence of this I recently noticed an advertisement for "Beautility" furniture, proving at least that in the mind of the salesman utility of itself is not enough. It is for this reason that I am apprehensive of any attempt at excessive standardisation, starting innocently with specifications of materials, leading to the shape and design of components made from them and ending with the complete blueprints of buildings and finally of the buildings themselves supplied by one of the Ministries. Driven to its ultimate conclusion standardisation must destroy individualism and initiative. A new Britain in which the rights of individual expression in Art or in any other field are denied will not be the new heaven we have been led to expect. When I see some of the proposals for redevelopment and rebuilding—the products of standardised austerity—I wonder if steel and glass are likely to be the only materials used in the future. For a soothing antidote I turn to Canalleto's famous view of London from the south side of the Thames, which shows the white spires of Wren's rebuilt City Churches and the New St. Paul's, and I hope that after all there may be some compromise between the great traditions of the Queen Anne and the Georgian periods and the glass house of the future.

I am fortunate enough to live in a city in which there is one cathedral in the early stages of building and another nearing completion. They are to the designs of two of the greatest architects of our time. I mention them as instances of the great contribution to the whole life of a city which such buildings can make. They stir the emotions and they excite the desire for a greater understanding and practice of the Arts. I hope that at some appropriate time in the future we as architects may meet in the cathedral designed by Sir Giles Gilbert Scott to give thanks for the inspiration and the skill of all who plan great buildings. Apart from the benefits vouchsafed to those who use this great cathedral on St. James's Mount for the purposes for which it was erected, it stirs the emotions and imagination of all who enter into it.

I am permitted by that great master of our language, the Dean of Liverpool, whose friendship I am privileged to enjoy, to quote from the service of the Cathedral Builders held this year when thanks were given for the beauty of the great Sanctuary, for the

"strong pier and soaring arch"
"windows glowing with colour"
"shafts of light stabbing the darkness"
"deep shadows and carvings flecked with gold"
"wide spaces and poised vault where lingers the music of organ and of choir"
"massive tower proclaiming man's steadfast faith amidst the tumults of a troubled world."

—words aptly chosen and which by their very simplicity describe so vividly not only the beauty of this great building but also remind us of the work of all those other craftsmen of the Arts which it enshrines.

It is in the shadow of this massive tower, setting the standard of beauty in design and quality in craftsmanship that the City will be redeveloped. It was in the shadow of many a lesser tower that our villages and smaller towns grew up. To-day we are contemplating the building of a number of completely new towns and one wonders around what focal point they will be developed and whether without some guiding and protective influence they will foster that spirit of interdependence which is the basis of all community life. Whilst I realise that many are anxious to try the experiment of creating an entirely new town it may be found that there are advantages in expanding existing townships however small they may be, for they already possess the essentials for community life, limited though it may be, a sure foundation on which to build up a successful local government. These may be problems of sociology, but they affect us as architects, for we claim to be planners and we cannot plan communities without some knowledge of their needs. It is hoped that, subject to such overriding control as will obviously be essential, individual enterprise will be given full play in these new developments. They will be watched with interest, but problems will arise the solution of which may be more difficult than expected by those who have had no previous experience of them.

I would like to raise one final matter which seems to follow the mention of control in the building of new towns. We are all naturally anxious lest in our vast rebuilding schemes the beauty of the whole should be marred by the ugliness and incompatibility of a few buildings erected by those incompetent to design, those who indulge in the worst form of advertisement by "stunting" or those who set aside the architectural code of good manners. At the present time the power of control is vested in the local authorities. Until such time as we may be sure that the representatives of the people, like the people themselves, have a sound sense of architectural appreciation, we may be right in expressing the opinion that in reaching decisions the authority should be guided by competent architectural advice. Controls are always unpopular and when matters of taste are involved they present the greatest difficulties to those who operate them. The matter is one which needs very careful consideration, but we must take some action to prevent the countryside being littered with building atrocities.

I promised at the outset that I would be brief. For once, being free of all controls. I have wandered over a wide field, but only touched in a superficial and platitudinous manner upon matters which are really of great importance. I leave with you three words I used at the outset of my address. Co-operation. Tradition. Dignity. It is only by the closest co-operation of all concerned and by a willingness to set aside all self-interest that, mindful of our traditions but not slaves to them, we shall accomplish our part in the building of a better Britain in a way befitting the dignity of a great people.

VOTE OF THANKS

The Rt. Hon. George Tomlinson, M.P., Minister of Works: It is certainly a pleasure as well as a privilege to have the opportunity of moving a vote of thanks to your President, for two or three reasons. The first is because he comes from Lancashire; and it is always a pleasure in London to greet a fellow-Lancastrian, particularly when he has got to the top of the tree. I think that the address he has given us to-night not only indicates that he is at the top of the tree but shows that he is there because of qualities which you have recognised—in spite of the fact that he comes from Lancashire!

The President referred to the fact that he belongs to that class of individuals whose name is almost regarded as a joke

to-day—the bureaucrats. He added, however, that he was not of recent vintage, which led me to wonder whether he thought that there was a difference between the temporary bureaucrats, who are largely the outsiders who have come in, and the permanent bureaucrats.

I would say a word of thanks to him for one question which he put. He asked whether there is an innate ability to understand and appreciate that which the architect provides for us, or whether it is something which has to be cultivated. I am not capable of giving an opinion from an architectural point of view, but from a human point of view I have the feeling that we are all so made that we respond to that which is beautiful when it is presented to us. A good deal of the ugliness of the past was tolerated because we were so seldom given the opportunity of appreciating the beautiful—because it just was not there.

All the standardisation has not taken place since this Government came into being. In my own young days, I lived in one of a long row of houses which were more standardised than anything I know to-day—brick boxes with slate lids that extended from one end of the street to the other. They are very useful when you are electioneering, but from the standpoint of architecture they leave much to be desired. Yet I ought to say a word, I think, in favour of them, because there was attached to them a humanity which sometimes is not developed where there is more space. The communal spirit, which is part and parcel of any true development, did find expression in that long row of houses in which I was born, for it was quite customary to run into the bottom house of the row and to emerge eventually at the top house at the other end.

I do not mind the suggestion—a very pointed one—that there is one Ministry which is selling standardised houses. I think that the standardised house is a good house ; it is as good as any standardised house could be. Let me put in a word at this stage for the bungalows which are springing up all over the country as a temporary measure, at any rate. I know that they are not what you would design. None of us have done what we would desire to do for the last six years. But I can say of these standardised bungalows which we see on every hand, and which may be revolting to the eye of the architect, that I have been into four or five hundred of them which are now inhabited in all parts of the country, and, in spite of the fact that you do not like them outside, I have not come across anybody who did not like them inside. I found only one person in the whole country who was living in one of these houses and who found fault with it, and that was a lady in Rotherham who said it was too far from her mother's.

A house has to be not only a thing of beauty but a home. The time will come, and I hope quickly, when you can build all the beautiful things that you desire ; but if, Philistine though I may be called, I can provide a home for people who badly need it now, I am prepared to accept this standardisation in order to bring happiness into the lives of people who have nowhere to live. I defend these temporary houses not from an æsthetic or architectural point of view but because they can speedily be turned into homes, and at the moment that is the only thing that counts.

As the President has said, there is before us and before the building industry, of which you are a part and which you serve, an unlimited programme or a programme limited at the moment only by the materials which can be made available. As the days pass, those materials, I hope, will increase, and, as they increase, the opportunity for the development of the art of architecture will be there.

I know that if you are going to do your best work you must be free, free to express yourselves as you desire. One thing that I have discovered in the last twelve months—and I know that you will forgive me for saying it here—is that if only I could get two or three of you to agree as to which is the best, some of my problems would be a good deal easier !

You have asked for co-operation. I hope that co-operation will be forthcoming, and that your members will be prepared to co-operate not only with each other but with the local authorities, who need your help, and with the Government, who need it also.

As for tradition, all that is best in our tradition should be retained. We ought to be big enough to realise that because a thing is old it is not of necessity wrong, and we should retain the best that our tradition brings us. Dignity not only becomes everybody, but becomes every profession, too. I can promise you that we, the Government, apart from the great housing programme to which the President has referred, have a building programme, and in the carrying out of that great programme in the years to come, beginning almost immediately, I shall need, and I am quite certain that I shall obtain, as my predecessors have done, all the help and co-operation for which I ask from you and from your great Institute.

Do not get it into your heads that we are going to have all the work for the Government done by individuals in the Ministry, and that you will not get a chance. I can assure you that you will, so far as we are concerned. I hope that the co-operation for which your President has asked in his address will be forthcoming, and that we shall go forward together to build or to rebuild a country of which not only from an architectural but from every other point of view we shall be justly proud.

I have therefore very great pleasure in moving that our best thanks be given to the President for his excellent address.

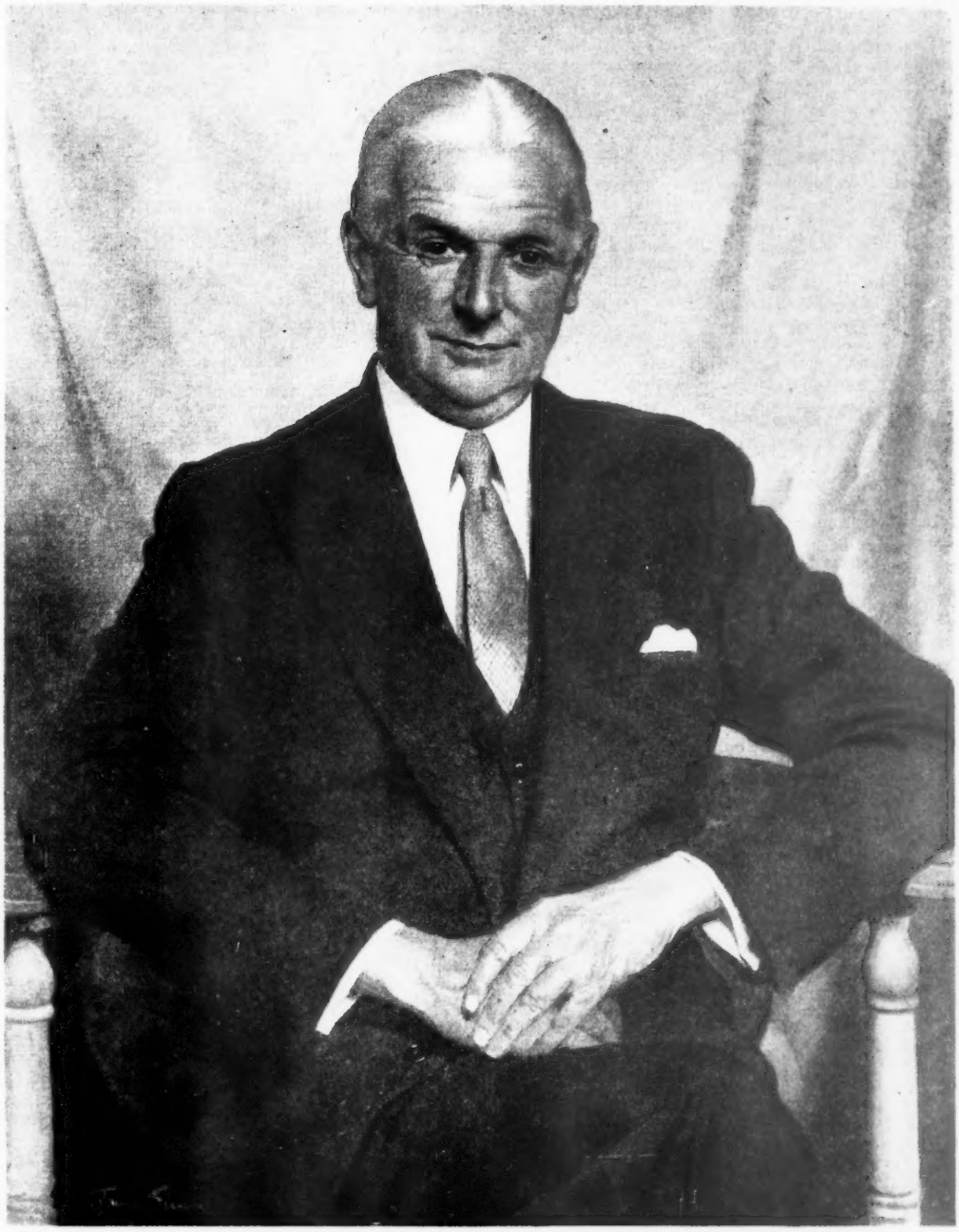
Dr. F. W. Dwelly, M.A., Dean of Liverpool : I am now face to face with the august body which is responsible for seeing that Britain grows more and more beautiful. In addition to that, I have the honour and pleasure of seconding the motion proposed by the Minister, Mr. Tomlinson. I know one or two things about him. I know his home ; I have preached in his parish. I know the people there. But that does not interest you so much as something else that I can tell you : he cares for the individual craftsman. To have in these days someone who can see ahead and cause action to be taken at once for the good of the individual craftsman is a great blessing from God for this our country.

I count it a real pleasure as well as an honour to second his motion. He did not say the things that I would like to say, so I am going to refer to one or two of the things said by Mr. Keay—or, I should say, your President. I am in a little difficulty here. If this were a religious meeting I should know the proper term to use, but how to address your President—whether you call him " your Grace " or " your Eminence " or " your Holiness "—I do not know.

I am thrilled when he talks about encouraging the young architect. I think the young architects need the attention of you elderly gentlemen. (Notice how quickly I am becoming a preacher ! I am made that way, just as you, if you had a pencil and paper, would all be doodling now.) I see crowds of young architects. They come into the cathedral in Liverpool. They need encouraging in the real thing ; and, if the ladies here will forgive my saying so, that applies to the girls in particular. You need to encourage them in such a way as to stop their floppiness and help to give them a real philosophy of beauty because students are affected, in my experience, much more by beauty and strength in architecture than by all the sermons ever preached.

I speak of a philosophy of beauty, such as Plotinus gives. I like to see the work your President is doing, as I can from the tower of Liverpool Cathedral. If you have eyes to see (and I presume that every architect has eyes to see), you will look round and find he has a spot there and a spot here and that he has made the beautiful city inevitable.

I am very concerned that in several towns in which I am interested, and where great work has to be done, to find that you are so shy, so full of mock humility. It is mock humility, because true humility is when a man says " I know what ought to be done." I do not like to see you standing by and allowing the engineer to dictate the things which you should see to—where the architect should have the determining voice. Where the architect should do the work, blow your trumpet and say so. Say so in the nastiest way possible ; if you say it nicely, nobody will take any notice of you ; the Press takes no notice of something nice. If you say " Bless their hearts ! " there is no profit



SIR PERCY EDWARD THOMAS, O.B.E., Hon. LL.D., D.L., J.P.

President 1943-4, 1944-5, 1945-6.

From the portrait by Mr. James Gunn.

in that! I have the greatest pleasure in seconding this vote of thanks. I am very grateful to the President for his address, which we have all enjoyed.

The President: I shall be very brief in thanking you for receiving my address so kindly. You, Mr. Minister, have referred to Lancashire, and you sometimes refer to yourself as a simple Lancashire lad. "Simple" does not mean soft in Lancashire; it means sincere, and therefore there is no one I would rather have to propose this motion than a simple Lancashire lad. The Dean of Liverpool is one of my closest personal friends, and I think that it was exceedingly kind of him to come here to-night; I value it very much indeed. The Minister will forgive me for using this opportunity to say one or two naughty things to him. Fortunately, we know one another well enough to say just what we like to each other. I thank you very much indeed.

THE UNVEILING OF THE PORTRAIT OF SIR PERCY THOMAS

The President: I have now come to the part of the evening that I am really going to enjoy. It is my duty to ask that the portrait of the last President, my very distinguished predecessor and well-beloved President, Sir Percy Thomas, be unveiled. I am not going to give you all the details of his career and tell you of all his attainments and achievements; that would only embarrass him, I know; but I will mention two. One is the granting of the honorary degree of Doctor of Laws of the Welsh University situated in Cardiff, where he lives. There can be no finer compliment to a man than to be honoured by his own city. The other is the honour of knighthood which he received from His Majesty the King, our Patron, this year, the crown of a distinguished career.

I believe that Sir Percy has been, except for the first President, President of this Institute for longer than anybody else. He will probably remember that eleven years ago he was here to unveil the portrait of Sir Giles Gilbert Scott, and Sir Giles told an amusing tale of how a Press reporter had rung up the artist and said, "I understand that a portrait by you is being unveiled. How did you paint Sir Giles?" The artist replied, "I took a brush . . ." "No," said the reporter, "I don't mean that. What was he wearing?" "Oh," said the artist, "I think he was wearing a badge." Sir Percy Thomas is not wearing a badge, but otherwise he is correctly dressed. He would not wear the badge very often, because he said, "You can always get another President, but it would be difficult to get another badge, at any rate in war-time."

I think you will find that Mr. James Gunn has caught that discerning look in Sir Percy's eye and that humour in the other eye—you never know whether he is going to pounce on you or commend you—and that smile on the corners of his lips. Sir Percy was beloved by everybody in the building, from the Secretary to the youngest member of the staff.

The portrait was then unveiled.

Sr Percy Thomas: This is probably the most embarrassing occasion of my life! I am only glad that you do not make me stand beside the portrait! I do not know what one says at the unveiling of one's portrait! I shall not say anything about the portrait, but I should like to say something about the painter. I have been asked many times how many sittings I had, and people have said what a bore it must be. I believe there were about ten sittings, but I can say quite frankly that I recommend any man who has been having a busy time, as I have had during these years, to have his portrait painted. For two hours at each sitting he will get a rest. You do not have to sit stiffly to be painted, at least not if you have Jimmie Gunn as the artist: he keeps up a running commentary of anecdotes, serious and otherwise, and you can smoke and do just what you like. I do not want to advertise him, but I thoroughly enjoyed what to many people is a great ordeal.

Mr. James Gunn: This is always a very serious ordeal for me. Time was when I used to be worried in case people did not think that the portrait was like, but in these days of modern psychological portraiture I am not sure that I am not more diffident about producing something that is like.

It seems only yesterday that I was a promising young fellow, and almost overnight I find that I have become a reactionary, quite out of touch with his time and with the art which is the expression of his time. I am inclined to agree that in its later phases the art of painting is the expression of this time—and not only the art of painting. I cannot imagine the events of the last decade related to the melodies of Strauss, the noble harmonies of Beethoven. But I can see Europe devastated, I can see the monuments which enshrined centuries of human genius crushed, to the frenzied beat of the tom-toms, to the sound of jazz and to the mad cacophonies of to-day. I think that these things are an expression of our time, and the question is, where do we go from here? Must we pursue the idiot's march beyond Bçersheba?

But I did not come here to say this. I came here to tell you how great an honour it is to be asked to paint the President of this Institute. Sir Percy seems to have enjoyed the sittings; certainly I enjoyed the painting, and I could ask for no more congenial subject than one who has served you so well and who, believe me, I too am here to honour.

LIST OF PRINCIPAL GUESTS

The following accepted invitations to attend:

Mrs. L. H. Keay. Miss Keay. Miss J. Keay. Sir Percy Thomas, O.B.E., D.L., J.P., Past-President R.I.B.A. Lady Thomas. Miss Thomas. Mr. James Gunn. The Rt. Hon. Lord Reith of Stonehaven, P.C. G.C.V.O., G.B.E., D.C.L., LL.D., M.Sc., M.Inst.C.E., M.T.P.I. [*Hon. F.*]. The Rt. Hon. Viscount Portal, P.C., D.S.O., M.V.O., V.L. [*Hon. F.*]. The Rt. Hon. Viscount Lee of Fareham, P.C., G.C.B., G.C.S.I., G.B.E. [*Hon. F.*]. The Rt. Hon. Viscount Leverhulme [*Hon. F.*]. The Rt. Hon. Sir Leslie Scott, P.C., K.C., Lord Justice of Appeal [*Hon. A.*]. Sir Harry Vanderpant, D.L. [*Hon. A.*]. Mr. Harry Batsford [*Hon. A.*]. Mr. Richard Coppock, C.B.E., L.C.C. [*Hon. A.*], General Secretary, N.F.B.T.O. Miss Elizabeth Denby [*Hon. A.*]. Mr. R. Fitzmaurice [*Hon. A.*], Deputy Chief Scientific Adviser, Ministry of Works. Mr. George Hicks, C.B.E., M.P. [*Hon. A.*]. Mr. G. J. Howling [*Hon. A.*], Editor, *The Builder*. Mr. H. J. C. Johnston [*Hon. A.*]. Sir Reginald Stradling, C.B., M.C., D.Sc., Ph.D., M.Inst.C.E. [*Hon. A.*], Chief Scientific Adviser, Ministry of Works. Mr. G. L. Pepler, C.B., P.P.T.P.I., F.S.I. [*Hon. A.*]. Mr. Evelyn Shaw, C.V.O. [*Hon. A.*]. Mr. B. S. Townroe, M.A., D.L., J.P. [*Hon. A.*]. Sir Jonah Walker-Smith, M.Inst.C.E., F.S.I. [*Hon. A.*]. Mr. F. R. Yerbury [*Hon. A.*], Director, Building Centre. The Rt. Hon. Henry U. Willink, M.C., K.C., M.P. Sir Arthur Rucker, K.C.M.G., C.B., C.B.E., Deputy Secretary, Ministry of Health. Sir John Wrigley, K.B.E., C.B., Deputy Secretary, Ministry of Health. Mr. H. Symon, Under-Secretary, Ministry of Health. Mr. Stanley Mayne, Ministry of Health. Miss E. A. Sharp, Ministry of Town and Country Planning. Mr. A. L. Cowtan, M.C., Master of the Painter-Stainers Company. Mr. A. G. Harfield, President, Royal Institution of Chartered Surveyors. Brig. A. H. Killick, C.B.E., D.S.O., M.C., Secretary, Royal Institution of Chartered Surveyors. Prof. H. J. Collins, M.Sc., M.I.C.E., M.I.Mech.E., President, Institution of Structural Engineers. Major R. F. Maitland, O.B.E., Secretary, Institution of Structural Engineers. Sir William Halcrow, President, Institution of Civil Engineers. Mr. F. C. Hawkes, M.A., Secretary, Auctioneers' and Estate Agents' Institute. Mr. S. F. S. Hearder, Director, N.F.B.T.E. Mr. E. W. Garrett, F.I.O.B., President, L.M.B.A. Mr. J. W. Stephenson, C.B.E., J.P., President, N.F.B.T.O. Mr. F. W. Purse, M.I.E.E., M.I.Mech.E., President, B.I.N.C. Mr. H. B. Bryant, Secretary, B.I.N.C. Mr. Pembroke Wicks, C.B.E., LL.B., Registrar, A.R.C.U.K. Mr. Graham Dawbarn [*F.*], President, Architectural Association. Mr. H. J. W. Alexander, Secretary, Architectural Association. Mr. A. R. Potter, Secretary, Town Planning Institute. Mr. C. Roland Woods, Codes of Practice Committee, Ministry of Works.

MODERN HEATING AND THE ARCHITECT

REPORT OF THE ARCHITECTS' SECTION OF THE CONFERENCE "FUEL AND THE FUTURE"

(Concluded)

Held at the R.I.B.A. and Westminster Central Hall, 8, 9, 10 October, 1946

The proceedings of the Opening General Session, Opening Session of the Architects' Section at the R.I.B.A. and Sessions I and II of the Ministry of Fuel and Power Conference "Fuel and the Future" were reported at Pages 3-30 (inclusive) in the November, 1946 R.I.B.A. Journal. Session III, at which the subjects "Insulation of Buildings—Methods, Costs and Influence on Design" and "District Heating" were discussed and the proceedings of the Closing Session when representatives of all Sections of the Conference reported on the general conclusions of their respective meetings are reported below.

SESSION III OF THE ARCHITECTS' SECTION AT THE R.I.B.A.

Dr. F. M. LEA, DIRECTOR, BUILDING RESEARCH STATION, IN THE CHAIR.

INSULATION OF BUILDINGS—METHODS, COSTS AND INFLUENCE ON DESIGN

Dr. F. M. Lea, Director, Building Research Station, Chairman at Session III on "Insulation of Buildings—Methods, Costs and Influence on Design," said that at the two previous Sessions a number of papers had been presented and he expected that everybody felt that they required some time in which to digest all the information which had been given. He had, however, come to the conclusion that there were two points which would be firmly fixed in everyone's mind. One was that oft-repeated dictum that the English home was the smallest in the world, and the second that the ratio of the comfort obtained in the home in this country to the fuel consumed was almost the lowest in the world. Those two statements were a real challenge which had to be faced.

During the morning Session they had been told what the appliance designer and manufacturer were doing to face that challenge. They had also been told by Mr. Pinckheard the problems with which architects were faced regarding the installation of modern forms of heating appliance. There was another side to that picture. It was not enough to put in heating appliances which would give a large amount of useful heat in the house in relation to the fuel they consumed if the houses were so constructed as to allow that heat to go wastefully out. Therefore the second aspect of their problem was the subject of the present Session. That was the problem of insulation. In many ways it might be said that was a simpler problem than the problem of appliance deficiency. The question was how to conserve the heat which had been put into a house by the different types of appliance. It was something which could be done and from which there would be immediate results.

Bound up with the question of insulation which was concerned with the overall heat losses in the house there was also the question of low capacity linings on the inside of the walls. For that reason it was important to consider intermittent heating as opposed to continuous heating.

"INSULATION AND ITS VALUE"

Mr. A. S. Dufton: In the half-hour which has been allotted to me I should like to tell you something about an experimental study of heat conservation in small houses which was made last winter at the B.R.S.

In its report on "Heating and Ventilation" the committee under the Chairmanship of Sir Alfred Egerton, which was appointed by the Building Research Board to make recommendations for practice in post-war building, expressed the opinion that the utmost importance should be attached to the conservation of heat in the building of houses, and pointed out that improvements in the insulation of buildings will, in general, reduce both the fuel bill of the occupant, and the amount of coal which has to be mined. A typical small house was examined by way of example, and a balance arrived at as to the expenditure on insulation, additional to the normal cost of the building, which could justifiably be incurred on account of the saving in the heating cost.

Eight houses have been built at the Building Research Station for the joint purpose of research in house construction and full-scale tests of the heat requirements of houses insulated to different standards. The objective was to obtain experimental evidence which would help in assessing the amount of insulation which is worth while and to ascertain how the heating of a house insulated to the committee's standard compares with that of an "uninsulated" house. The recommendations of the committee were conservative and so, in view of the possibility that a higher standard of insulation than that proposed might be envisaged, the houses were designed to provide the four distinct grades of insulation shown in the table. (Fig. 1) Grade A represents the ordinary pre-war house and grade C the standard recommended by the committee.

I do not propose to expatiate upon what these coefficients mean. This has been adequately dealt with in the Report on Heating and Ventilation, which I am sure you have all read

Thermal Transmittance, B.Th.U. per sq. ft. per hr. per deg. F.

	A	B	C	D
External walls	0.30	0.25	0.20	0.15
do. do. living room	0.30	0.20	0.15	0.10
Windows	1.0	1.0	1.0	0.5
do. living room	1.0	1.0	0.5	0.5
Ground floor	0.35	0.20	0.15	0.10
Roof and top-floor ceiling	0.56	0.30	0.20	0.15

Fig. 1.

But I do want to say that the houses were designed by an architect to give the required insulation without any more assistance than is given by the admirable booklet on *The Computation of Heat Requirements* published by the Institution of Heating and Ventilating Engineers. The booklet explains how the coefficient for a composite wall is calculated and gives the necessary data for this purpose. It is gratifying to be able to report, not only that samples of the composite walls used were tested at the National Physical Laboratory which confirmed the computed figures, but also that the computed heat losses for the houses as a whole agree very well with the amount of heat which had to be provided to offset these losses.

The heating system installed is one of the various combinations considered by the Egerton Committee, and was selected because it is an experimentally convenient example of an installation using solid fuel. Background heating is provided by embedded ceiling panels in the living room and the parlour, which serve also as floor panels for the two main bedrooms; and the living room is "topped-up" by an electric fire. Hot water for the panels is supplied, through a heat interchanger, by a hot-water supply boiler, which also provides the domestic hot water. It was decided to include experiments in two more houses—one grade A and the other grade C—in order to ascertain whether it would be advantageous to eliminate the topping up and to warm the living room solely by the central heating installation.

A thermostatically controlled magazine boiler, suitable for burning anthracite grains, has been installed in the kitchen of each house. The thermostat brings into operation a fan, which supplies air to the fire and promotes vigorous combustion. When the thermostat switches the fan off, the fire slumbers under the natural draught of the chimney. The boiler heats a hot-water tank in the linen cupboard indirectly and, through a specially designed heat interchanger, which serves as a towel warmer in the bathroom, supplies hot water to invisible ceiling panels in the living room and in the parlour.

In two houses the ceiling panels serve to keep the living rooms comfortably warmed night and day and to provide background warmth in the parlour and bedrooms. In the other four houses the panels supply only background heating. An inset electric fire in the living room was used for extra heating and in each house a time-switch turned the fire on between the hours of 7 a.m. and 8.30 a.m.; noon and 1.30 p.m.; and 4 p.m. and 10.30 p.m., corresponding to the typical usage suggested by the Egerton Committee. In these houses eupatheostats, one of which served to limit the heating of the rooms during these topping-up periods by switching the fires off and on so as to maintain an equivalent temperature of 65 deg. F. when that temperature was attained. The electricity for the fires was metered independently of the other consumption in the houses. In order to utilise heat which would otherwise be lost, a duct is provided round the boiler flue-pipe and this serves to supply heated air to the landing on the first floor.

Provision for ventilation has been made in accordance with the recommendations of the Egerton Committee. Air is admitted to the living room, the parlour and the three bedrooms from the hall and landing through specially designed louvres above each door and is withdrawn from each room by means of a flue. The flue has a cross-sectional area of 30 sq. in. and is suitable for a gas fire. The main ventilation intake is via the tool-shed, whence the air passes through a grille into the hall. Provision was made for warming the incoming air by means of a radiator, but it was found to be superfluous as the heat from the lower part of the flue, which passes through the tool-shed, proved to be fully sufficient to temper the air.

Apart from eupatheostats in the living room, no other room temperature controls were used. A maximum-and-minimum thermometer was hung on the wall of each room, the hall and the landing, with its bulbs 5 ft. from the floor. The location of the thermometer was the same in any room from house to house and was chosen to minimise any effects of radiation on the thermometer. The thermometers were read and reset each morning. The equivalent of 250 gallons of hot water at 140 degs. F. was drawn off in each house every week. This was done by running up ten baths of approximately 25 gallons each, one every morning and one in the afternoons of Monday, Wednesday and Friday.

The daily fuel consumption of the boilers was determined by weighing. The magazines have wide mouths and so special narrow-mouthed hoppers were inserted so as to make it easy to fill up to a definite level each day. The only other attention required by the boiler was the removal of clinker from the fire-beds. This was not a daily operation but was carried out regularly after a hundredweight of fuel had been burned on the cleaned fire-bed.

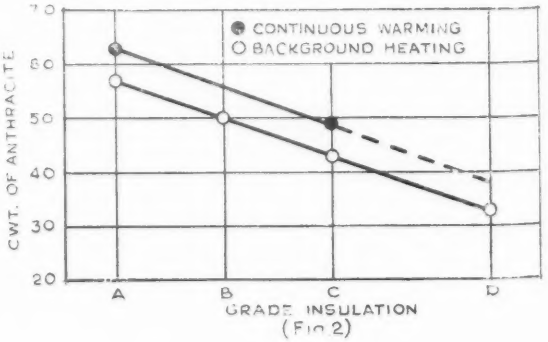
The experiment commenced with all the panels of each topped-up house turned off. When, as the weather turned cold, the minimum temperature in any of the parlours or two principal bedrooms fell below 50 degs., the panels of that house were put into service by closing a by-pass valve in the linen cupboard.

When the minimum temperature in the rooms rose above 55 degs., as it did when there was a spell of warm weather, the by-pass valve was reopened until such time as background heat was again required.

The installations were designed to give substantially equivalent conditions in the various houses, despite the differences in insulation, and were operated to do so as closely as possible. Care was taken to ensure that the houses with the higher grades of insulation were no less warm than the less well-insulated houses. This equivalence is shown by the average daily minimum temperature for each house (the mean minimum of all the rooms) taken for the period 1 November to 31 March. The average mean temperature of each house was approximately one and a half degrees higher than the average minimum temperature.

The fuel consumptions for the six winter months have been plotted to illustrate the progressive reduction as the grade of insulation rises from A to D. (See Fig. 2) The grades have been set out so as to give a straight-line graph for background heating. This is convenient as it enables interpolation to be made for grade B, and extrapolation for grade D, on the graph for continuous warming.

The electricity required for topping up was virtually independent of the grade of insulation and the amount was substantially the same in each house—about 1,800 kWh. for each living room for the winter six months. The reason for this is believed to be that the requirement depends more upon the intensity of radiation provided by the fire than upon the increase



(Fig 2)

in the rate of heat loss due to the increased warming of the room. By a horizontal beam of 40 B.Th.U. per sq. ft. per hour the equivalent temperature is raised about 7 degs. F., irrespective of the general warming of the room. As the topping-up was independent of the grade of insulation of the various houses, the saving of fuel due to insulation can be appraised in terms of the fuel required to provide the background warmth and the hot-water supply.

With grade A, the pre-war standard, as datum, the savings found for grades B, C and D are as shown in the table (Fig. 3), which lists both the annual saving of fuel and also its monetary value, reckoned at £4 4s. per ton. The saving found for grade

Grade of Insulation	Saving of fuel	Monetary Value
	cwt.	£ s. d.
B	7·2	1 10 3
C	14·4	3 0 6
D	24·2	5 1 8

Fig. 3

C, from experiments in the houses in which the living rooms were kept comfortably warmed, amounted to 15·3 cwt., valued at £3 4s. 3d. On these fuel savings one could justify an additional initial cost of £60 of a grade C house over a grade A house, and this figure also underlies the suggested maximum values of thermal transmittance put forward by the Egerton Committee.

The boiler used in these experiments was an efficient one and only 20 per cent. of the potential heat of the fuel escaped from the chimney or was left in the clinker. If a less efficient appliance had been used a somewhat greater saving would have been found; but it would be difficult to justify higher insulation costs on the ground that inefficient appliances are to be used.

As I mentioned earlier, two houses, one grade A and the other grade C, were duplicated in order to ascertain whether it would be advantageous to eliminate the topping-up and to warm the living room solely by the central-heating installation. In the six winter months, in a grade A house 7·9 cwt. more fuel sufficed to keep the living room comfortably warmed at all times, and in a grade C house 6·8 cwt. This extra fuel has to be set against the 1,800 kWh. required for the six months topping-up of a living room.

Now, as £1 17s. 6d. will purchase either 1,800 units of electricity at ¼d. per unit or 9 cwt. of anthracite grains at £4 4s. per ton, it is clear that it is advantageous to eliminate the topping-up and to warm the living room solely by the central-heating installation unless electricity can be obtained for a farthing a unit. And even so the warmth provided by the electric fire is less generous and less equable than that afforded by the central-heating installation. In a house with a less efficient central-heating installation, a proportionately higher price for electricity would naturally be considered as justifiable.

In the Egerton Report, an estimate is given of the fuel consumption for a house at Kew of "medium" insulation (intermediate between grade A and grade C, and substantially equivalent to grade B) of floor area 768 sq. ft., the centre house of a terrace. It is of interest to compare these figures with the values obtained in the present experiments in detached houses, of floor area 1,050 sq. ft., heated by a similar combination of appliances.

The range of values given in the Egerton Report for the solid fuel requirements corresponds to various assumed boiler efficiencies and even the maximum appliance efficiency assumed is below that obtained from the boiler installed in the present houses. The comparison, which is conveniently made on the basis of the fuel consumption for the six winter months, from 1 October to 31 March, is set out in the table (Fig. 4). The

Service	House in Egerton Report	Present Experiments		
		Grade B	Grade A	Grade A
Heating and Hot-water Supply ..	68-112 cwt.	49-6 cwt.	56-8 cwt.	64-7 cwt.
Topping-up living-room	1,550 kWh.	1,924 kWh.	1,607 kWh.	Nil

Fig. 4

average outside temperature for the period was 42.9 degs. F., substantially equal to 42.6 degs. F., the normal figure for Kew.

When it is remembered that the average daily *minimum* temperatures in the relatively large, detached, experimental houses were as high as 56 degs., 56 degs. and 59 degs. respectively, it is clear that the comparison reveals that an important further saving of fuel, over and above that estimated in the Egerton Report, can be obtained. And the figures in the last two columns refer to "uninsulated" houses. It is practicable, with less fuel than that estimated by the committee for a terrace house, to heat to an even higher degree a larger, detached, uninsulated house.

I would like to draw three conclusions from these experiments. The experiments confirm the view of the Egerton Committee that an expenditure on insulation can justifiably be incurred, additional to the normal cost of building, on account of the substantial saving in the heating cost. They confirm that, if the additional initial cost does not exceed £60 for a small house, the maximum values of thermal conductance put forward by the Committee are reasonable, and that still lower values are to be preferred where they can be obtained economically.

The *dictum* of the Committee, that those responsible for the choice of methods of heating of new houses need to make a careful study of the relative costs of the various systems available in any district, is lent added emphasis by the investigation into the advantage of eliminating topping-up by an electric fire and of warming the living room solely by the central-heating installation.

The experiments show that it is practicable to heat a house with an economy of fuel even greater than is apparent in the Egerton Report. It is hoped that this demonstration will lead to increased economy and efficiency for the individual user and to a more economical utilisation of the national fuel resources.

METHODS, COST AND INFLUENCE ON DESIGN

Mr. R. Fitzmaurice, B.Sc., M.Inst.C.E. [*Hon. A.*]. Deputy Chief Scientific Adviser, Ministry of Works.

Introduction

The problem of the right choice of the amount of insulation to provide in a new building is a complex one. There are three quantitative factors operative at any given time—the insulating value of structures—the cost of structures erected complete—the cost of fuel. Only the first of these factors remains stable and the other two fluctuate in relation to other economic factors in the national life. To some slight extent, however, the last two may be expected to show similar trends over long periods of time. It follows, therefore, even if it were possible to lay down an exact balance of values to suit all three factors, that this balance would only be correct for the particular time at which it was formulated.

Despite the difficulties, however, it is usually possible to make a sane decision even at a time like the present, and there are various authoritative recommendations which can be followed. To those who have been working on the scientific aspects of the heat insulation of buildings for a great many years it must be very gratifying to find that at long last heat insulation is recognised as one of the major desiderata. I refer particularly to Mr. Dufton, Dr. Griffiths and other members of the staff of D.S.I.R.

As a result of their labours during the last twenty years it is possible to estimate the heat insulating value of almost any projected form of construction with sufficient accuracy for all normal design purposes. This is a huge step forward and it means that the enormous programme of building which lies before the country can be tackled with the firm assurance that reliable values of heat insulation are easily predictable. The values of heat insulation which are quoted in this paper were provided by the Building Research Station and this, it may be added, at very short notice.

The Problem :

To come now to the problem of heat insulation of buildings as it affects the designer. It can be considered under the following headings :—

1. Layout and planning of buildings as a means of avoiding excessive heat loss.
2. How much thermal insulation to provide in the structure.
3. How to provide the amount of thermal insulation indicated under (2) above.
4. What is the cost involved in providing the required heat insulation.

Layout and Planning of Buildings to Minimise Heat Loss

As a first simplification it is assumed that the whole of the interiors of buildings are warmed and that the main problem is to prevent unduly rapid escape of heat through the outer shell. There are all sorts of complications when different parts of buildings are heated to different temperatures, but it is probably sufficient for practical purposes to deal with the outer shell only.

Purely from the point of view of conservation of heat the best shape for a building is the one which encloses the maximum of space with the minimum area of external shell. If curvilinear figures were admissible the sphere or hemisphere would be the most efficient. In rectangular shapes the cube is best. A town of cubes and spheres might be uninteresting but it should be remembered that long, thin, straggling buildings must tend to be expensive to heat and will be more wasteful of heat than the more compact arrangements.

The next factor is orientation. Heat flow is greatest where the temperature difference between inside and outside is greatest. There is a marked difference between the coldness of the exterior of buildings on north facing and south facing aspects. The northerly winds are colder and the sun's heat, whether direct or reflected from clouds, is greatest on the south side. Consequently the rooms which are most used and where warmth is provided more regularly should be placed on the south facing sides of our buildings. When we consider the important question of the gain of heat from the sun through windows of our buildings this question of orientation assumes a major importance. To provide large windows of a living room or working kitchen facing anywhere between N.W.-E. should be regarded as a crime.

How Much Thermal Insulation to Provide

Owing to the major importance of housing at the present moment, and because housing is in many ways the most difficult type of building from the point of view of heating and heat insulation, it is proposed to deal specifically with housing in this paper. The data which are assembled are, however, equally applicable to other buildings and the problem is basically the same for all buildings.

There is an abundance of literature on the subject of the requirements for thermal insulation in the construction of buildings. Perhaps more than should be current at any particular time. The following publications in particular might be mentioned :—

1. The Housing Manual, issued by the Ministry of Health and Ministry of Works.* The Manual lays down irreducible minima for the thermal insulation of the structure of houses though, in fact, it would be desirable wherever possible to work to higher standards of insulation.
2. Post-war Building Studies Report No. 1—House Construction. Standards of thermal insulation are recommended which in the main specified in 1 :—
3. Post-war Building Studies Report No. 19—Heating and Ventilation of Dwellings.* This report contains what are in fact the most authoritative recommendations on the subject and the reasons for adopting the values set out are indicated. It should be noted, however, that the recommendations laid down in this report are most conservative and that higher values of insulation could easily be justified.

The Report by the Fuel and Power Advisory Council on Domestic Fuel Policy endorses the recommendations of the Egerton Committee, so that for the time being there are the strongest reasons for following them. It is to be expected, however, that in the near future the standards of heat insulation will be codified in the form most suitable for universal adoption in the British Standard Code of Practice, Code of Functional Requirements for Building which is now in course of preparation.

Providing Appropriate Standard of Thermal Insulation

If the designer is to follow the recommendations laid down in the documents enumerated above it is necessary to be able to assign a figure for the heat insulating value of the elements of most of the common types of structure which he will normally have to use. From the point of view of the architect this is an important step to recognise. The subject must be dealt with quantitatively and to use the figures intelligently it is desirable to have an understanding of the principles involved. Fortunately the principles are reasonably simple and only the simplest arithmetic is necessary in the day-to-day computations which are likely to be called for. Equally fortunately the subject is dealt with comprehensively and in a form convenient for use in a booklet " The Computation of Heat Requirements for Buildings," published by the Institution of Heating and Ventilating Engineers. With the aid of this book it is possible to assign a value for the heat insulating value of almost any normal form of structure which is likely to be dealt with in day-to-day practice. Where the necessary data cannot be found for some unusual combination of materials it would be desirable to address an enquiry to the Building Research Station.

In the notes which follow the values of heat insulation quoted are in terms of estimated " Thermal Transmittance "—termed " U "—which is the over-all heat transmittance from interior air to external air, taking account of all surface effects and is the figure appropriate for average external conditions. The values are given in terms of the heat flow through the structure expressed in British Thermal Units flowing through each square foot of the structure per hour for every degree Fahr. difference in temperature between inside and outside air.

In the short time available it is proposed to examine the Thermal Transmittance " U," and the cost of various elements of the outer shell of buildings and to deal with them under the headings of External Walls, Roofs and Ground Floors. The costs are given as a range which is believed to be reasonably representative of current prices and are prime costs of materials and labour to which must be added the appropriate amounts for overheads, profit, etc.

External Walls

The Egerton Committee recommend that the Thermal Transmittance " U " should not exceed 0.20 B.Th.U. per sq. ft. per hr., per deg. F. for any part of a house and should not exceed 0.15 for the walls of the warmed living room. The costs and " U " values in Table 1 are for various common traditional types of external wall.

The 9 in. solid brickwork has a thermal transmittance twice as great as the recommended value and should be ruled out. It can be improved, however, by the substitution of a fibre board internal lining on battens in lieu of two coats of plaster for a moderate increase in cost. Unfortunately the supply position is not such as to encourage the wider use of any type of wall board at the present time, so that the 9 in. solid wall seems to be ruled out for the moment. The 14 in. solid wall is expensive and does not approach the desired value of thermal insulation.

* H.M.S.O. 1944

* H.M.S.O. 1944

TABLE 1

	Wall Construction	Range of cost for a typical house of about 1,000 sq. ft. floor area	Thermal Transmittance "U" B.Th.U., sq. ft., hr., deg. Fahr.
(i)	9 in. brickwork, rendered and rough cast externally, plastered internally	£156-165	0.41
(ii)	As (i) but with ½ in. fibre board on wood battens in lieu of internal plaster	£175-185	0.22
(iii)	As (i) but with 1 in. wood wool slab finished skim coat plaster stuck to brick with bitumen in lieu of internal plaster	£184-195	0.25
(iv)	As (i) but 14 in. brickwork in lieu of 9 in.	£210-220	0.34
(v)	11 in. cavity wall, 4½ in. facings, 2 in. cavity, 4½ in. common brick, 2 coats plaster internally	£165-175	0.34
(vi)	As (v) but with 3 in. clinker concrete slab in lieu of inner leaf of 4½ in. brickwork	£150-160	0.27
(vii)	As (v) but with 4 in. clinker concrete slab in lieu of inner leaf of 4½ in. brickwork	£157-167	0.24
(viii)	As (vii) but with ½ in. fibre board on timber battens in lieu of 2 coats plaster internally	£176-185	0.15

The normal cavity wall is seriously deficient in thermal insulation but is very much improved by the substitution of an insulating concrete slab for the inner leaf of brick. The cost also is reduced when a clinker concrete slab is used and all in all it seems reasonably clear that this type of construction is the most advantageous for current conditions. When foamed slag aggregate becomes more widely available at an economic price a combination of facing brick exterior leaf and foamed slag concrete slab inner leaf would be almost ideal. The fact is that under existing supply conditions it is very difficult to get the traditional construction down to the values of insulation set out in the Egerton report.

(*b*) Poured Concrete Types

No-fines concrete has been an important means of economy in skilled labour and is likely to be extensively developed in the near future. Table 2 gives costs and thermal transmittances for various mixes.

Looking at the data in Table 2 it is evident that the choice of aggregate is all important in no-fines concrete. Clinker aggregates can give a wall with reasonably good insulation and it is likely that "clean" clinker aggregates will be marketed in the near future. Ballast concrete no-fines walls cannot be brought down to reasonable values of thermal transmittance by thickening up, but they can be considerably improved by lining the shuttering with insulating boards and will still be very economical in cost. When the supply position for insulating boards improves the lined no-fines concrete wall in a dense aggregate will be a very good choice; in the meantime the clinker no-fines in a fairly thick wall is good. Dense foamed slag concrete walls can give very good insulation at a moderate price. Thus an 8 in. thick wall will have a thermal transmittance of U=0.18 for a cost of the order of £130-140.

(*c*) Framed Walls (post and panel types)

Generally speaking the framed walls, which are characteristic of many of the prefabricated and partially prefabricated house types now under development, can easily be brought down to the recommended values of thermal transmittance because it is possible to introduce a layer of highly insulating material within the thickness of the wall. The costs tend to be on the high side owing to the high cost of prefabricated elements, but there is often a saving in skilled labour on sites and speed of completion which may in some part counter-balance the higher cost. Table 3 gives some typical values of costs and thermal transmittances for walls of this type.

The conclusion is that the commendably low values of thermal transmittance are due to the facility with which highly insulating materials such as fibreglass or slag wool can be incorporated in the framed structure. Incidentally these materials are themselves relatively inexpensive.

(*d*) Windows

Windows form an important proportion of the area of the walls of any building and merit special consideration since they account for a high proportion of the total heat loss from a warmed building. As has already been mentioned the windows have a notable effect on the total heat balance by virtue of the admission of sun heat but obviously this effect only occurs when the sun is sufficiently high above the horizon. The heat loss through the windows at night is very high, the thermal transmittance through the glass being of the order of U=0.88 as compared with the recommended value for walls of U=0.20–0.15. The cost of wooden or metal windows complete with frames, glazing and painting is roughly of the order of half that of the corresponding area of walls for the cheaper wall construction. In order to minimise the high loss through the windows at night it is necessary to use reasonably heavy, tight fitting curtains which will effect an important reduction or, alternatively, the use of double glazing may well be justified. Double glazing has become standard practice in many countries which are little, if any, colder than the colder parts of Great Britain.

2. Roofs

(*a*) Pitched Types

The position with pitched roofs is that the normal pre-war practice gave a roof with very poor thermal insulation. It is very easy, however, to improve this to the recommended standards

TABLE 2 Poured Concrete Walls

	Wall Construction of no-fines concrete	Range of cost for a typical house of about 1,000 sq. ft. floor area	Thermal Transmittance "U" B.Th.U., sq. ft., hr., deg. Fahr.
(i)	8 in. thick clinker aggregate, render and rough cast externally, 2 coats plaster internally	£136-145*	0.30
(ii)	As (i) but 10 in. thick	£145-155*	0.25
(iii)	As (i) but 12 in. thick	£154-165*	0.22
(iv)	8 in. thick, ballast aggregate render and rough cast externally, plaster 2 coats internally	£137-147*	0.45
(v)	As (iv) but 10 in. thick	£147-157*	0.40
(vi)	As (iv) but 12 in. thick	£156-166*	0.36
(vii)	As (iv) 8 in. thick but with ½ in. fibre board in lieu of internal plaster	£160-170*	0.27
(viii)	As (iv) 8 in. thick but with 1 in. wood wool slab and plaster skim in lieu of internal plaster	£169-180*	0.23

*If constructed by specialist firm.

TABLE 3 FRAMED WALLS

	Construction	Range of cost for a typical house of about 1,000 sq. ft. floor area	Thermal Transmittance "U" B.Th.U., sq. ft., hr., deg. Fahr.
(i)	Light timber framework, covered externally with painted steel sheet, lined internally with plasterboard, 1 in. fibreglass quilt in cavity	£175-200	0.15
(ii)	Concrete posts, with concrete slab externally and plasterboard internally, 1 in. fibreglass quilt in cavity	£170-200	0.15
(iii)	As (ii) but with 2 in. clinker concrete slab internally and sheet of aluminium foil on paper backing in cavity	£156-220	0.23
(iv)	Precast foamed slag concrete panels, 8 in. thick, mechanically erected, tile facing externally and skim coat plaster internally	£150-180	0.20

TABLE 4 PITCHED ROOFS

	Construction	Range of cost for a typical house of about 1,000 sq. ft. floor area	Thermal Transmittance "U" B.Th.U., sq. ft., hr., deg. Fahr.
(i)	Plain tiling on battens, felt, rafters, purlins, with plasterboard ceiling, plaster skimmed	£85-100	0.43
(ii)	As (i) but with 1 in. fibreglass or slag wool laid over ceiling joists	£90-105	0.18
(iii)	As (i) but with fibreboard in lieu of plasterboard ceiling	£87-102	0.15
(iv)	Asbestos cement sheeting on timber purlins and light board trusses with plasterboard ceiling	£65-75	0.43
(v)	As (iv) but fibreboard ceiling	£67-77	0.25
(vi)	As (iv) but 1 in. fibreglass or slag wool over ceiling joists	£74-84	0.15

TABLE 5 FLAT ROOFS

	Construction	Range of cost for a typical house of about 1,000 sq. ft. floor area	Thermal Transmittance "U" B.Th.U., sq. ft., hr., deg. Fahr.
(i)	7 in. × 2 in. timber joists, 1 in. nominal wood boarding firred to falls, finished 2 layers 3-ply bitumen felt, bitumen coated and topped, 1 in. macadam, plasterboard ceiling under	£70-75	0.29
(ii)	As above but fibreboard ceiling in lieu of plasterboard	£72-77	0.22
(iii)	As (ii) above but with aluminium foil on paper draped over joists	£77-82	0.16
(iv)	5 in. reinforced concrete slab, plastered ceiling, finished 2 coats 3-ply bitumen felt, coated bitumen and gritted	£85-90	0.52
(v)	As (iv) but fibreboard ceiling laid on shuttering	£90-95	0.33
(vi)	As (v) but with 2 in. average foamed slag concrete screed below bitumen felt	£98-105	0.25
(vii)	As (iv) but with r.c. and hollow tile slab in lieu of solid r.c.	£100-105	0.44
(viii)	Precast reinforced concrete joists, 2½ in. foamed slag concrete slab over with 2 in. average foamed slag concrete screed covered 2 layers 3-ply bitumen felt, bitumen coated and gritted, ceiling of plasterboard on timber fillets attached to joists with necessary noggings	£100-105	0.20

TABLE 6 GROUND FLOORS

	Construction	Range of cost for a typical house of about 1,000 sq. ft. floor area	"U" B.Th.U. per sq. ft., per hr., per deg.F
(i)	4 in. × 2 in. timber joists on honeycomb sleeper walls, 1 in. nominal t. & g. boarding ventilated under, including excavating hardcore and oversite concrete	£55-60	0.35
(ii)	As (i) but with building paper covered both sides aluminium foil draped over joists	£60-65	0.20
(iii)	As (i) but with 1 in. fibreglass or slag wool quilt draped over joists	£63-68	0.16
(iv)	1 in. nominal t. & g. boarding on 1½ in. × ¾ in. dovetail fillets embedded in surface of concrete slab, with 10 lb. per sq. yd. pitch coating applied hot over surface of concrete and fillets including excavation and hardcore under	£51-60	0.15
(v)	As (iv) but with ¾ in. wood block laid in bitumen in lieu of boarding	£62-66	0.15
(vi)	As (iv) but with granolithic finish in lieu of boarding	£40-45	0.20
(vii)	As (iv.) but with pitch mastic in lieu of boarding	£44-50	0.20

and the cost of doing so is very moderate. The Egerton Committee recommended as standard for rooms that thermal transmittance "U" should not exceed 0.2-0.3 B.Th.U., per sq. ft., per hr., per deg.F. Table 4 gives appropriate costs and thermal transmittances for various types of pitched roofs.

In examining the above figures it is obvious that the modest extra cost of adequate thermal insulation is abundantly justified. There is the question where to put the insulation. By placing it over the ceiling joists instead of up the roof slope the quantity of material required is significantly less, and fixing is much simplified. Storage tanks and water pipes can and should be individually insulated to protect them against frost.

(*b*) FLAT ROOFS

Table 5 gives some approximate costs and thermal transmittance values for various types of flat roof.

The conclusion is that the flat roof can easily be brought down to the required standards of insulation but that the concrete roof cast in situ is not quite so easy to deal with economically as the other types.

3. Ground Floors

The main problem with the ground floor is the choice between the normal ventilated timber floor and the solid floor direct on a concrete slab. So far as costs are concerned the problem is complicated by the amount of under building required. On reasonably flat sites the solid floor direct on the concrete slab is the cheaper. On sloping sites the timber joist floor on sleeper walls has the advantage in cost. With the present shortage of timber and with the superior insulation of the solid type of floor it is reasonable to swing the balance over rather more towards the latter type.

Here again, it can be seen that the recommended standards can readily be obtained and on a reasonably level site without additional cost.

DISCUSSION

The Chairman announced that a written question had been received from Mr. A. H. Broderick (Barnet) which he would ask Mr. Fitzmaurice to read and answer.

Mr. R. Fitzmaurice said that Mr. Broderick's question related to the Egerton Report. The first paragraph of the letter read :

> "Officially recommended standards of thermal resistance for post-war housing have been set up and are beginning to be fairly widely accepted. How does the Egerton Committee justify their suggestion that such standards should be adopted only if they can be attained at a cost equal to half their true value reckoned in monetary savings in heating cost? (Chapter 4, Section 4.2.1.)."

The idea at the back of the Egerton Report was to preach the gospel of better insulation and to start off by being very conservative about it. At the time it was drafted the idea that one should thermally insulate buildings was not really an accepted fact and the Committee thought it a good idea to be conservative and capitalise on half the quantity of saving. That was, in fact, the basis of that recommendation. The Committee had said, "Here is a saving in the total running cost of the house over the year. If we capitalise half that saving and add it to the cost of the building we shall be economically justified."

Mr. Broderick's second question was :

> "As a result of their own half-price criterion the Committee appear to prove that insulation in many forms is unjustifiable economically. In Table 4 (1) they suggest lining an 11-in. cavity wall with 1-in. fibreboard on battens and say that the 'allowable increase in cost' is 6d. per sq. ft. (4s. 6d. per sq. yd.) for the whole house or 9d. per sq. ft. (6s. 9d. per sq. yd.) for the living room only. In Table 4 (3) they suggest an allowable increase of 2d. per sq. ft. (1s. 6d. per sq. yd.) for laying insulating board above ceiling joists, beneath boarding and tiles and over a plaster or plasterboard ceiling. The control price of ½-in. insulating board is 2s. 9⅜d. per sq. yd. equivalent to 5s. 7¼d. per sq. yd. for 1-in. The reader is therefore bound to conclude that these forms of insulation are quite uneconomic and unjustifiable.
>
> Examples could be multiplied. Does the Egerton Committee consider that in publishing this they are helping the cause of insulation, or don't they believe in it themselves?"

Mr. Broderick had pointed out that those figures were not strictly justifiable because the price of insulating board was higher than the price taken in the Egerton Committee's Report. He had already mentioned that anyone who tried to argue about costs of thermal insulation was on dangerous ground because costs were slipping away all the time. In the interim between the writing of the Egerton Report and its publication costs had risen. He was grateful to Mr. Broderick for pointing out the flaw which had come into the argument. Mr. Broderick suggested that the Committee would have done insulation a better service if they had pointed out that, instead of adding to the cost of the roof structure by adding insulating board on top of the joists, the substitution of insulating board for the plaster and plasterboard as the ceiling and another layer of ½-in. insulating board instead of the roof boarding would effect a reduction of the thermal transmittance to 0.19 and at the same time save money. He thought one must agree that that would be the case. He himself had suggested such a substitution in his own paper.

Mr. Nelson Haden said that a long time ago he had been one of the signatories of the Egerton Report. He would like to take the opportunity to say that since its completion, and in the light of further work and investigation, he had come to accept the arguments, some of which had been put forward at the present Conference, in favour of full and continuous heating at least for the living room or, for the whole house, a much higher degree of background heating than recommended in the Egerton Report. The Egerton Committee, after all, had started by putting forward a very revolutionary idea, that of background heating for houses of the class with which they were concerned and then they examined a large number of combinations of apparatus which could be used. But for various reasons it was not possible then for them to put down the present-day value costs against those various combinations. Their Report was completed some time ago and, in present conditions, it was a long time before it was printed. If, however, they had been able to do that it was his personal opinion that they would have recommended a much higher degree of background heating than in fact they did.

He had been concerned with the design of the houses which Mr. Dufton had shown and it was interesting to see that his opinions were borne out by Mr. Dufton's results. It needed special emphasis, however, that Mr. Dufton's tests were carried out during the previous winter, long after the Egerton Report was completed. The Egerton Report was concerned with a fairly long-term point of view. It therefore behoved everyone to get all the heating possible from the ordinary domestic boiler or back-boiler which was used for hot water supply.

It might be of some interest to the Conference if he mentioned an experiment which had been made. The trend of the industry lately in the design of small boilers was to increase the size of the firepot. That was done in order to make the boiler carry enough fuel so that it remained alight at night and to provide finely graded temperature control, to provide complete absence of air-locks and to promote frequent attention or cleaning of the fire. Those objects were exemplified in the new British Standard Codes. He suggested that that was wrong and that their object could be achieved more efficiently by depending for control on ash removal or disturbance. If refractors were added and a special grate put in for the small domestic boiler its efficiency could be improved and the amount of attention required reduced. The brief results of a test which was still proceeding showed what could be done on those lines to produce hot water and background warmth with a small quantity of fuel. A boiler serving a 30-gallon storage tank and a large radiator of 60 sq. ft., equivalent to something more than 2 kW, was lit at 2 p.m. on Monday and a short while afterwards fully charged with coke. At that time the flue damper was completely closed. No further manipulation of the dampers was necessary. The test was still in progress with the dampers in the original position. At 10 p.m. on the same day

the boiler was re-fuelled but no ash was removed. The next morning lightly disturbing the ash caused the fire to revive rapidly. The temperature of the water in the storage tank was 130 deg. F.

Throughout Tuesday the only other attention given was ash removal and re-fuelling at 9 a.m. and 3 p.m. and charging the boiler at night at 10 o'clock. The CO_2 content was maintained at 10 per cent. The radiator was pulling its weight all day in spite of the withdrawal of 30 gallons of water. Those results were possible with modest rates of fuel consumption. The procedure resulted in a consumption of between 1¼ and 1½ pounds of fuel an hour during the day and ½ lb. during the night. The weekly consumption of fuel was 1½ cwt. For that amount of fuel not only was 250 gallons of hot water obtained but some measure of radiator heating.

This technique could be applied to open fireplaces by fitting a small firepot at the back of the grate. The capacity was less than ¼ cu. ft. and there was a fire capacity of 6 lb. of coke, but it would keep alight all night and provide heat for a 30-gallon storage tank. No dampers were provided, control being effected by removal or disturbance of ash.

Mr. A. H. T. Broderick (Barnet) thanked Mr. Fitzmaurice for answering his written questions. In the past they had heard such a lot of nonsense talked about insulation that it was very refreshing to hear a lot of sense talked about it.

There was one point upon which he wished to correct Mr. Fitzmaurice and that was on the imagined shortage of insulating material. He assured him that the shortage was largely imaginary and it had probably been brought about by the operation of controls. To take one material alone—insulating board—the annual supply from mills in this country, Canada and Scandinavia was probably in the region of 250,000,000 sq. ft. If 1,000 sq. ft. were allowed per house for insulating the roof in the manner which he had suggested, namely, using ½-in. insulating board as roof boarding under the tiles and another ½-in. as a ceiling it would be seen that that one material alone would provide adequate roof insulation giving thermal transmittance at a figure of 0.19 for about 250,000 houses per annum. Vast quantities of slag wool, glass silk, aluminium foil and other forms of insulating material were also available.

One reason why architects did not specify insulating materials was that in certain cases where their plans and estimates (with specified insulating materials) had gone to the Ministry of Health they had been told that they must cut their price down. Insulation, being normally one of the things which added neither to the appearance nor to the stability of a structure, was one of the easiest things to cut out and often had been cut out to reduce the cost of the building.

Col. F. C. Temple (Regional Controller of the Ministry of Fuel and Power for Cumberland and Northumberland) said he wished to talk about the subject of insulation in India because he had spent 30 years in trying to keep people cool. He thought that almost everywhere they had gone through a period of moving in the wrong direction to the extent that as they had improved building materials and methods and had used thinner walls they had lost something which they were only now beginning to replace. In a country where there were sun temperatures of 130 deg. F. something pretty good was required. The old mud wall of the Indian bungalow, which had to be 2 ft. thick to stand, was a very good insulating material and so was the old thatch roof. A 14-in. brick wall was not too bad with mud in the joints. When lime was added it became less insulating.

Mr. E. G. Fowler (Leicester) said that he had found the Conference very interesting and he thought that there was a great deal of technical unanimity. Mr. Dufton's paper, however, suggested that there were differences about the conclusions reached in the Egerton and Simon Reports, both of which advocated background heating and topping up. Mr. Dufton had carried out tests which indicated that full central heating was more economic. He did not think that the Conference should leave the matter there.

Mr. R. F. B. Grundy (Wallasey) asked for more information about the proposed method of insulating ceilings. From discussion of the matter he was not sure whether the suggestion was that the blanket should go over the ceiling joists with the secondary difficulty that it would conceal the electric conduit and the water pipes and make them difficult of access or whether it was proposed to lay it in strips between the joists, which had obvious advantages from the point of view of laying and preservation.

The Solid Fuel Installations, Post-war Studies No. 10, 1944, stated that modifications to the hearth construction would be necessary for supplying air for combustion but that the additional building costs would not be likely to be serious. Standard hearths of a suitable type might be sold with those appliances which required hearth combustion. In 1945 the Institution of Heating and Ventilating Engineers Study No. 19 had an excellent drawing of the construction of a hearth but there was no sign of any air inlet to that hearth and presumably the air was drawn from the room. From the figures which he had got out it would appear that the heat losses in the living room, when merely consuming the air for the necessary change of ventilation, amounted to 22.4 therms per annum. But the annual heat loss owing to the extra volume of air drawn in for combustion of the fire added up to 56.4 therms. Therefore, for the luxury of having cold air round one's feet it was necessary to pay for another 43 therms per annum, which was about 10 per cent. of the total fuel for the whole year for the whole house.

Mr. R. Fitzmaurice said that the question of blankets would be a matter rather of when one could get the job done. If strips could be obtained, all well and good, but they were not easy to get. If strips could be obtained they should be placed between the joists. He did not know off-hand what it would cost to get the strips cut but that might be an important issue.

The question regarding getting the air into the hearth by passing it above the hearth was covered in a Ministry of Fuel and Power leaflet, now available for circulation. He thought that that leaflet should be regarded as the official pronouncement.

Mr. Clothier (Southwark) said that Mr. Haden's suggested method of using controlled boilers put out of date the beautiful examples of stove which were to be seen and also effected a considerable saving in machinery. He would like to have more details on that subject and he would also like to know whether it was applicable to space heating units.

Mr. J. S. Hales said it was quite true that the loss of heat caused by excessive ventilation was a serious matter and the suggestion made in certain reports for bringing in some of the air for combustion from outside rather than through the room itself would save a good deal of fuel and add to the comfort. There were, however, two methods of overcoming the difficulty. One was to bring the air in from outside and the other was to so design the fire that the volume of air drawn through was considerably reduced. He believed he was right in saying that the example quoted by Mr. Grundy, in which there was no outside air connection shown, was explained by the fact that the throating of that fire was reduced with the intention of correspondingly reducing the volume of air drawn through the room. He was not sure that that was a complete answer but it might throw some light on the reason why in one case air was recommended and in another not.

With regard to the question of using ash as a means of control there was no doubt an increase in the number of appliances which were using that method and Mr. Haden had mentioned the independent boiler as a case in point. It was an effective method. It had possible advantages also in that grates were usually bad where shale and stone were concerned and the grateless appliances overcame that objection to a certain extent. There was one possible difficulty, namely, that with some fuels and some ash characteristics their operation was sometimes not quite so reliable. There was a possibility of considerable development in that method of firing.

Mr. J. Creese (West Suffolk County Council) asked why a flat roof was chosen for the experimental houses referred to by Mr. Dufton. He also wished to know whether it was considered

better to put an insulating material on top of the rafters rather than on top of the ceiling joists.

Mr. S. M. Sternfeldt (London) pointed out that no one had mentioned the question of glazing and the heat transmission through glass. Double glazing must have considerable effect on transmission and he thought that a number of those present would like to know whether any experiments had been carried out on that subject. He realised that glass was difficult to obtain and therefore it was rather a question for the future.

Mr. R. Fitzmaurice said that the experimental houses were built not only for experiments in heating but for structural experiments. The houses were interesting in that the whole of the structural loads were carried by 4½ in. of brickwork. To make such a building stable it was necessary to have a strong, rigid diaphragm and that had been achieved by means of a flat roof.

On the question of whether it was best to place insulating material at the ceiling level, or on the rafters, he personally preferred the ceiling level because it required less insulating material. It followed from that that the cost was lower. There were objections, however, to putting it on the ceiling.

He had not had sufficient time to include anything about double glazing in his paper. As building technique advanced, he would expect to see Great Britain going the same way as many other countries and double glazing becoming universal. A number of countries with climates rather similar to that of Great Britain did, in fact, use double glazing and would not contemplate putting up any building without it. He regretted that he had no reliable data as to the cost of double glazing. It was known that double glazing would almost reduce heat losses by half. In Switzerland double glazing was estimated to cost 30 per cent. to 40 per cent. more in the glazing costs. The cost of glazing was roughly speaking half the cost of the wall it replaced. The area of windows could be increased and double glazing could be used which would reduce the heat losses, and result in a greater solar gain.

The Chairman said he would like Mr. Dufton to say something about the savings effected by applying insulation to a hot water supply. He would also be interested to know what the heat losses were with unlagged pipes and tanks.

Mr. A. S. Dufton said that he would have liked more notice of the question because it was not altogether a matter of saving. His mind was carried back some 18 years to an experiment he had carried out in his own home. The hot water supply was provided by a combination grate in the kitchen. The hot water system was not compact. There was 50 ft. of piping and a 20-gal. storage tank, all entirely unlagged. The result was that there was no hot water and he had therefore altered the layout. He had not been able to bring the bath any nearer to the grate but he had been able to get the tank vertically over the grate. He had installed a 40-gallon tank which was quite a large storage for a small fire in a combination range and he had insulated that well with cork. Thereafter he had had hot water. The combination grate, which was not a domestic hot water supply boiler at all, was an adjunct to a cooker. It burned 18 lbs. of fuel a day and it gave not less than two baths of hot water besides its function of cooking and warming the kitchen. It was that aspect of insulation which was probably more important than the saving of fuel because the loss of heat from a hot water system did not necessarily go out of the house.

Mr. Hartland Thomas [*F.*] said that he would like to ask the Chairman a question on a subject which had not yet been dealt with, namely, the coal consumption required to produce various building materials. If they had some data on that their all-round information would be very nearly perfect.

The Chairman said that that was a problem of long-term implication. If it was going to be necessary to economise on fuel on a long-term basis, it might be necessary to consider the quantities of fuel required to produce different building materials. Taking first 9 in. solid thickness of Fletton bricks built in 1 : 3 cement mortar, with ½ in. 1 : 1 : 6 rendering on the external face, the amount of coal required would be 27 lb. per sq. yd. If the external rendering were eliminated but the same material used, the amount of coal required came down to 25 lb. per sq. yd. Using the same thing but with colliery shale bricks, the amount of coal required went up to 37 lb. per sq. yd. and if common bricks were substituted the amount went up to 88 lb. per sq. yd. Using sand-lime bricks the amount was 37 lb. per sq. yd. and using foamed slag concrete cored blocks 18 in. by 9 in. by 9 in. in cement mortar with ½ in. 1 : 1 : 6 rendering the amount required was 23 lb. per sq. yd. Using the same thing in clinker concrete the amount required was 25 lb. per sq. yd. Those materials gave different degrees of insulation. The thermal transmittance of 11 in. cavity brick was 0.34. Foamed slag concrete cored blocks had a thermal transmittance of 0.25.

Mr. Hartland Thomas said that he thought it could fairly be said that as a profession they were insulation conscious and they had been that for a good deal longer than many other people. For an even longer period of time they had been very particular about the efficiency of equipment and efficiency in the method of installation.

The bringing of an architectural section into the present Conference indicated that a long-term view was wanted as well as a short-term view. Obviously, architects could do very little indeed about the immediate problem of this winter or next winter. The most they could do was to choose efficient methods for the particular buildings which were being put up—a very small factor. The long-term prospects were much more their business. On the long-term prospects it seemed to him that it was the feeling of the Conference that the standards of comfort from the point of view of heating inside houses required very radical reconsideration. Whichever way they went in the topping-up controversy, he felt sure that they would not be content with that sort of thing on a long-term basis.

He thought it could be claimed that during the war years those architects who were still concerned with building had co-operated very willingly and had worked in accordance with the standards of war-time building. They had used bricks when they wanted to use timber and had used steel sparingly. Now they could not use bricks for anything but houses.

He wondered whether the fuel situation, on a long-term basis, was really so acute or so important. He wondered if it would be public policy for the architects to be given a lead in the choice of building materials from the fuel point of view. In other words, was it going to be one of the most important pieces of costing to cost building materials in terms of coal utilisation? It was with that in mind that he had asked the Chairman a question on the subject. Should the architects ask for a lead of that kind? If they obtained such a lead he felt confident that the architects would follow it.

He thought he was correct in assuming that the question of extra cost of insulation should be included in the extra cost of installing apparatus. Unless a lead were given as to how much local authorities could spend in supplying improved apparatus it was impossible for them to so much as suggest such things.

Mr. M. D. Robinson (London) proposed that the Conference might suggest to the Ministry concerned that the controlled figures of £1,200 and £1,300 should be increased to cover some of the items which were apparently of value to the nation at large.

Dr. McFarlane (Ministry of Fuel and Power) said that those who had been present at the opening Session must have been very pleased to have had a categorical statement from the Parliamentary Secretary to the Minister of Health, Alderman Keay, on this point. Section H was no less alive to it than Section G. Miss Evelyn Sharp, until recently Under-Secretary in the Ministry of Health in charge of housing, had amplified Alderman Keay's statement.

Mr. F. R. Steele (Chichester) thought that the Conference had arrived at two general conclusions. It had condemned both the open fire in the distant future when non-bituminous coal would be more obtainable and it had generally decided that houses should be heated as a whole from a central source. There

were two things which would have to be done before that could be brought about. First they had to get a satisfactory focal point in the house to take the place of the fireplace and the television set suggested did not fill the bill because it was well outside the financial scope of the majority of the public. Secondly, they had got to battle against the old-established British custom of opening windows and he personally would not like to do that.

A Delegate remarked that it was most important to educate the public in the use of new appliances, particularly the housewife.

Another Delegate stressed the importance of impressing on the Minister of Fuel and Power and the Minister of Health that it was important that in fitting new appliances and insulation the cost should not be borne by the tenant, especially in Council houses. The Minister of Health should give the local authorities a larger subsidy to prevent a rise in rents.

Dr. McFarlane said that his present duty was simple and also very pleasant. Before he expressed his thanks on behalf of the Ministry of Fuel and Power to the R.I.B.A., he wished to thank some other people. First he would like to thank the audience. When he had first been told in the Ministry that he must interest himself in domestic heating—for which he was no doubt selected because he knew nothing whatever about it—he had tried to learn something. He had called for the reports of the Egerton Committee and other documents and he had read them from cover to cover. He had then talked with experts in the Ministry and thus armed he had begun to speak to people outside. He had aired some of his newly-acquired knowledge and the experts had looked at him and had said, " We know it all, but it is no good talking to us ; you must talk to the architects." They had been trying to talk to the architects but that they would not listen. He was very ingenuous and as a civil servant it was his duty to believe everything which was told him but he had found that pretty hard to swallow. He had then suggested that there should be a conference with the architects and the way that delegates had listened not only to all the learned speakers but also to people like himself was fair proof that the experts were not " shooting a line." He would therefore like to thank the delegates for their help in trying to solve the many difficult problems with which they were all faced. Mr. Thomas had spoken a few minutes previously of the willingness of architects to co-operate. He felt sure that the co-operation shown during the present Conference must continue and he could say on behalf of the Ministry that they would meet the architects more than half way.

He wished to thank the President and Council of the R.I.B.A. for making the present Conference in the R.I.B.A. building possible. The President had been good enough to come down and act as chairman at the first Session. Apart from making rooms available, the R.I.B.A. people had been magnificent in the way they had taken on the task of organising the Conference. He would like to say a special word about the officers of the Institute. Apart from the Secretary and Hon. Secretary, he wished to mention Mr. Bird and Mr. Marfell, who had done magnificent work on their behalf. He wished also to thank the speakers and in particular those from the Ministry of Works, the Ministry of Health and the Building Research Station, who had borne the brunt, perhaps, of the preparation and delivery of the papers. Finally, he would like on behalf of the delegates to move a vote of thanks to their present chairman, Dr. Lea, who had carried out his duty of guiding the meeting with his usual mixture of learning and urbanity. *(The motion was carried with applause.)*

JOINT MEETING OF ALL SECTIONS (CENTRAL HALL, WESTMINSTER) THURSDAY, 10 OCTOBER

SIR PATRICK DOLLAN, CHAIRMAN, SCOTTISH REGIONAL FUEL EFFICIENCY COMMITTEE, IN THE CHAIR

DISTRICT HEATING

The following extracts from a large number of Papers on the subject of district heating have been selected as being of special interest to architects.

Mr. A. Stubbs, B.Sc., M.I.Mech.E., said that district heating as a public service might be conveniently considered as a supply of heat for space heating and hot water in the form of a public utility service, comparable in scope with existing electricity, gas and water services. It might be provided for communities differing widely in size from housing estates to large cities. It was, however, to be regarded as being distinct from the supply of heat to consumers or groups of consumers of one specific type, such as might be found in many large central heating schemes. For present purposes it was convenient also to disregard the supply of heat for manufacturing processes, which practice was already fairly well understood. Process heat might be reserved for a particular example as being something supplementary to the case for district heating.

District heating regarded in this way dealt with the major heat requirements of people, but represented problems outside present experience in this country, nor could experience from abroad be accepted without interpretation and qualification.

In describing a theoretical large district heating scheme Mr. Stubbs said that particular points of importance in relation to the thermal load curves were the maximum heat demand and the summated or average demand, although it was also of interest to know the load curve shape when estimating the plant which was to be reserved as stand-by, or when considering district heat generation in relation to another service such as electricity generation. The scheme had been estimated to have an annual consumption per hour of 182 therms for hot water and 393 therms for space heating, making a total of 575 therms, whereas the maximum demand per house had been estimated as 3,000 B.Thu's per hour for hot water and 12,000 B.Thu's for space heating, making a total of 15,000 B.Thu's per hour.

It would not be desirable to assume that the ordinary householder would be prepared to pay more in space heating and domestic hot water supply from a district heating system than he does at the moment for heat obtained from burning solid fuel for the same purpose. A maximum demand of 12,000 B.Thu's per hour represented the heat emitted from 75 sq. ft. of hot water radiator surface. For a normal two-storey house of 500 sq. ft. ground floor area this would be sufficient for continuous heating to 65 degrees F. in the living room in severe weather, with a small amount of heating in the kitchen and upstairs.

The study of a typical town presented the following figures :—

Area of Town	25 square miles
Population of Town	250,000
Population served	60 per cent.
Developed area (acres)	
Industrial and Commercial	1,355
Community	1,475
Housing	5,700
Total	8,530
Maximum demand therms/hour :	
Industrial and Commercial Buildings	7,680
Community Buildings	2,440
Housing	6,180
Total	16,300
Load factor :	per cent.
Industry and Commercial	20.4
Community	20.0
Housing	43.7
Overall	29.3

The study of the problem had led to the thermal electric station. This was complex, for it involved not only the thermo-dynamic features and the apportionment of the heat costs between district heating and power, but also the proper use of the capital invested and the apportionment of the capital charges. The net result in the case of the typical town with its 60 per cent. development, was to reduce the cost per therm to the consumer to practically 20 per cent. when heat was generated at a combined thermal electric station, as compared with the cost of heat generated at a straight heat station. The overall cost per therm to consumers was 4.62 pence which was distributed as generation at 1.44 pence per therm, main distribution at 1.18 pence per therm and sub-distribution 2.00 pence per therm.

The fuel economy to be obtained by the use of a district heat service to the typical town gave a total annual saving of 132,000 tons per annum or an annual saving per head of population served of 0.88 tons.

Professor W. G. Holford [*A.*], speaking on district heating in relation to town and country planning, said that district heating as a comparatively new element in town planning, was of particular interest to the town planner for two reasons. First, because as a service it offered immense opportunities for improvement in amenity, convenience and public health ; and secondly, because it set certain physical and economic problems which required something more than good engineering to solve them. These problems were serious because they were relatively permanent in character and affected the distribution of homes, offices and factories as between town and country. It stood to reason that public utility provided at high capital cost, taking a long time to construct, requiring rights of way under the streets for distribution and mass-consumption for its economic operation, would be a long-term investment and would tend to stabilise the layout of houses or factories which it served. This involved questions of location, of plan-forms, of building and of rent and was therefore a subject in which the planner, engineer, architect and housing manager should co-operate.

Professor Holford then went on to say : "The main advantages which the public would derive from rational and efficient large-scale heating systems are the indirect ones, and these are the most difficult to assess in terms of cost. The greatest is probably the reduction of fog and smoke. Town planners look with envy at the sites of new towns in the Mediterranean area because they are free from atmospheric pollution ; architects see their buildings reduced to drabness within their own lifetimes owing to the effects of black smoke and sulphur dioxide ; and the average householder no longer reckons smoky chimneys as signs of prosperity, but associates them with black towns and depressed areas, and tries to find a house where the curtains will not need cleaning every week. But these likes and dislikes are nothing compared with the toll of disease, discouragement, and death which is all the time being paid in the background. There are towns where the death rate and the incidence of fog are equally high from the middle of November to the middle of January. There are whole regions of Britain in which a prolonged damp season reduces health and impairs efficiency. On the other hand, I know of a damp valley in County Durham where fog has been practically eliminated through the centrally-heated factories and offices. A little heat in winter, and fresh air and sunlight all the year round, are the greatest amenities which a town planner could wish to secure, both in the development of new towns and residential neighbourhoods, and in the re-development of slums and derelict areas."

On the question of zoning, Professor Holford said that one of the problems of planning was to group similar activities and houses together for the sake of convenience, common services and protection from conflicting types of development and, at the same time, to prevent segregation of houses or factories so that workers should not have to travel a long way from their homes. Therefore all town planners usually tried to avoid indiscriminate mixtures of factories and houses, providing instead compact residential neighbourhoods with schools, public buildings, small shops and workshops in each, with well-defined shopping and factory areas close by. To achieve this kind of planning clean factories were needed—even when they were situated to the windward of the houses, while both the industrial estate and the residential neighbourhoods with their community buildings were of a size and character to take full advantage of a central source of power which would provide space heating, hot water and possible process steam as well. It was true that factories were so quickly altered and extended that a district heating scheme might prove too inflexible for economy ; but each case should at least be considered on its merits.

Discussing the influence of district heating on industrial planning, Professor Holford said : "The next advantage that calls for consideration from a town planning point of view is the simplification of coal supplies and deliveries in built-up areas, and the reduction of the space at present devoted in every building to fuel storage and individual heating systems. Central heat on a metered or a rental basis, supplied from a thermal or thermal-electric station which is strategically located, would eliminate the need for a considerable number of lay-bys, loading docks, chutes, hoppers and fuel bins, boiler houses, chimneys and flues, stokers and cleaners. It would rid the narrower streets of the obstruction caused by coal carts and fuel lorries which are usually slow and bulky and which waste time and man-power in their unloading.

"The economy in building is also considerable where background heating is provided from a central source and flues are required only for ventilation or for small apparatus used for 'topping-up.' This is particularly true of large office buildings, though the reduction in brickwork or masonry in the chimney breasts and flues of small houses is also considerable."

In common with all improvements in the standard of living, this service had not only a high capital cost but would impose a constant addition to rent and rates in the form of standing charges. Where the poor householder could make desperate economy by denying himself a fire altogether, he would not, in any particular week or month, be able to turn off the district heating. There must be general acceptance of the services in the area of operation ; and if there was a strike or breakdown (and such things were not unknown in the best regulated systems) all the consumers suffered together. But this was the price of progress and to advance these as reasons against the adoption of a district heating system would be a policy of bankruptcy.

On the question of distribution, Professor Holford said that it was reasonable to expect that in a well-designed system, heat could be conveyed up to a distance of 2 miles with a loss of only 2 per cent. But whether the plant was central or outside the town, the distributing mains would have to pass under a considerable length of verge or pavement before they reached the

consumers. While in a few old towns there were large ducts capable of carrying these mains without further negotiation, tunnelling or excavation, in the majority of towns one of the greatest difficulties was likely to be the routeing of mains and the actual provision of space for the pipes and their insulation in conduits or tunnels. The moral was clear. If district heating was to be seriously considered, along with other essential services in redevelopment schemes, the layout, density and detailed site planning of the area should not be settled without reference to the heating engineer. If this were true of new schemes it was equally true of re-building schemes in the central areas of towns where the problem was even more difficult.

On the question of architectural amenity, Professor Holford said: "A further difficulty is the acquisition, in large built-up areas and in towns of high architectural and historical importance, of suitable sites for the power stations, particularly for large thermal electric stations with chimneys perhaps three hundred feet high. From all points of view, physical, economic and æsthetic, it is the problem of *re*-development and the adaptation of a new system to existing streets and buildings that is the more difficult of the two. But it is by no means insoluble. A power station functionally designed, built in pleasing materials, and with its coal-handling plant carefully sited to avoid unnecessary dust and disturbance, can be an architectural asset. But if its size and character are clearly incompatible with the development of the area it is intended to serve, the cost of placing it farther away and of increasing the length of the distributing mains must be squarely faced. Amenity is something which we must be prepared to pay for wherever we consider it really worth while."

It would be obvious that where re-development occurred in stages there would be loss of efficiency in several small thermal stations as compared with one large station, and more fuel was likely to be consumed proportionately. But the linking up of several stations, each designed to serve in turn a section of the whole area to be re-developed, might be the only practicable method in older towns.

It was now evident to everyone that services could be provided efficiently and cheaply for a large unit of building, under one ownership or management, whereas they were uneconomic for small units operating independently. The great eighteenth-century landowners had pointed the way to this. Local authorities, by virtue of the Housing and Town and Country Planning Acts, were now placed in more or less the same position to carry out large-scale development. In the centres of existing towns they were faced with the task and the opportunity of promoting under unified ownership and control the national and efficient development of hitherto unrelated properties. It was not unusual to find 20 to 30 buildings on an acre of ground, each with its own staircase, passages, light-wells, entrances and chimneys. On the same acre could be erected a building, individually designed but harmonious with its neighbours, containing the same or greater floor space, with better light, more direct circulation and improved resistance to fire and even space for car parking and trees. The same principle, he thought, might apply to such essential services as heating. The individual would be better served, the community better housed and the national reserves better used, if heat was organised on the scale of the town or district rather than on the scale of the single building or even the single inefficient open fire.

Mr. A. E. Margolis, Dipl. Ing., speaking on "Continental Practice," said that the development of district heating on the continent after 1917 had been facilitated by the shortage and big cost of coal. In 1921, the Hamburg Electricity Company and a leading heating firm formed a company for public heat supply. The success of this company encouraged many towns in the following years to take up district heating, though plants were on a small scale.

The predominant method of heating on the continent was by slow combustion stoves with a thermal efficiency of 40 to 50 per cent. as compared with 20 to 25 per cent. for open coal fires in this country. Moreover, as a rule a district heating plant had had to be designed for the heat supply of existing central heating plants only. It was also obvious that such district heating services could only be successful if the heat were supplied at a lower rate than the cost from central heating boilers. This explained why district heating services had had at first to be limited to favourable areas of towns with an adequate proportion of central heating installations. The conditions improved steadily because central heating, partly due to district heating, became more popular in following years.

According to his experience as manager of the District Heating Company in Hamburg and as the engineer responsible for many other schemes on the continent, the new service had been appreciated everywhere for its convenience, cleanliness, low cost and reliability. During his management at Hamburg only once in 12 years had the supply to a few consumers been interrupted owing to the flooding of basements.

In 1936 there were in Germany 27 district heating plants; this figure had not included the numerous central station heating plants for housing estates. The systems were: steam 16 plants, high pressure hot water 3 plants, low pressure hot water 3 plants, and steam and hot water 6 plants.

The development of district heating in the Soviet Union had been even more remarkable. It had been started on a very small scale in Leningrad with only two consumers in 1924-25. In 1938 the total heating system of Leningrad had already been extended to 44 miles. At the beginning of 1939 the total capacity of generating sets with heat supply for space heating and process work in the U.S.S.R. had amounted to 1,747,000 kW. and according to the Five-Year Plan of 1938-42, which was interrupted by the war, the capacity of all thermal power stations was to have been increased by 7 million kW., of which 5 million kW. were to be installed with back pressure or extraction turbines for heat supply. The heat-electric capacity would then have been 47.5 per cent. of the total steam-driven electric generating capacity in the U.S.S.R.

District heating had also been adopted in other European countries. The heat-electric station at Brno supplied steam to the majority of the textile and chemical factories of the town, and to many buildings for process work and heating. The Vatican City should be mentioned as the only city on the continent with a centralised heat supply throughout and supplied from a heat-electric station.

In the U.S.A. development had been somewhat slower. This was because the costs of plant distribution systems and labour had been lower on the continent and the cost of coal higher than in the U.S.A. The main reason, however, was that most American plants operated with straight steam supply. In contrast to continental practice, combined heat and power generation was seldom used in the U.S.A.

After describing the development of district heating in Hamburg, Mr. Margolis said that in Western Europe most of the plants were built for steam distribution, the hot water being provided by means of calorifiers. The disadvantage of steam distribution was the reduction of the electric power output of the back-pressure sets and the high, almost prohibitive cost, of steam storage. From the standpoint of power generation the low pressure hot water distribution system was the most efficient. The heating water replaced the cooling water of a condensing station, and the total latent heat of the steam was regained by the simplest way and at a very low back pressure.

When heat distribution systems were set in conduits and due regard given to the welding and expansion of mains, temperature stress, venting, etc., the reliability of a district heating service was greater than that of any other service. Provision of conduits and for expansion protected the mains against any movement

of the soil, while breakdowns were actually excluded. Simplified methods which aimed at economy by burying pipes direct in the ground sacrificed reliability of service.

Mr. S. B. Donkin, M.Inst.C.E., M.I.Mech.E., M.I.E.E., speaking on the "Prospects of District Heating in the United Kingdom," said that he had in the past few years prepared reports of several schemes of district heating in communities that had been badly bombed and in which there were large areas available for reconstruction. The application of district heating to reconstructed areas was obviously more favourable than to existing buildings in congested built-up towns, not only from the point of view of the buildings themselves but also because special provision for distribution could be made in the roadways. In existing towns the roadways and footways were already congested with other services. The advantage of freedom of roadways in newly-planned areas should not be lost.

The cost of any distribution scheme depended on the density of dwellings per area. The system of distribution might be a grid, i.e., a set of multiple ring mains giving for each service an alternative path for the flow and return, or a radial system fed from one or more central points or sub-stations, with or without some interconnection between the radial feeders, or, thirdly, it might be a combination of both ring mains and radial distribution. In any of these systems the feed and return had to be run to and from the heat supply station, and the heat of such transmission would vary with every scheme, depending on the selection of a suitable site for a heat supply station or the position of an existing electricity generating station.

The use of hot water as a heat carrier was economic and convenient because it could be supplied direct to radiators and thus dispensed with calorifiers; it enabled a lower back pressure to be used at turbines and thus gave a greater output of electricity; this electricity was greater in amount than that needed to run the circulating pumps. Hot water distribution also gave accurate temperature control and made possible heat storage in large capacity hot water accumulators which could be used at peak periods.

On methods of heat generation he had prepared comparative figures for heat-electric, heat-direct and heat pump systems. These clearly showed that the heat-electric system saved fuel with the lowest capital cost, within the range of projects he had considered. The capital cost of heat-pump systems was still very high but he expected this cost to be reduced and efficiency increased as the system was developed. Nevertheless, even at present-day prices heat pumps might be economical in suitable circumstances. If it be assumed that a large town had its own electricity generating station, equipped with a heat-electric system, the output of electricity would be roughly three times that required by the town when producing sufficient heat to meet the demand. This surplus electricity could well be used to give a supply to heat pumps as well as supplying electricity to neighbouring suburbs. Perhaps the simplest method of all would be for the authorities supplying heat and hot water to erect their own thermal-electric station and to sell all their surplus electricity to the existing electricity authority in the neighbourhood.

Mr. Donkin briefly discussed hydro-electric power. This generated at an efficiency of about 80 per cent. which made it suitable for domestic water supply through electric boilers in urban centres and heat storage vessels capable of dealing with variations in output due to tidal and similar variations, as in the Severn Barrage. The high efficiency of hydro-electric generation also justified the use of heat pumps.

R. Nicholas, B.Sc., M.Inst.C.E., City Surveyor, Manchester, speaking on "The Wythenshawe Scheme," said:—

Wythenshawe comprises some 5,567 acres of land added to the city of Manchester in 1930. It has been planned to accommodate 80,000 people, its present population being 40,000.

The district heating scheme can therefore be applied to about one half of the total development together with two of the three industrial areas—one being already partially developed on the traditional method of individual space heating—and the Civic Centre. The total area to be served is:—

	Acres.
Residential	967
Industrial	290
Civil Centre	53
Total	1,310

The Heat Distribution System

The scheme is thermal-electric comprising two power stations located in the western and south-eastern industrial zones, servicing, by inter-connected mains, the intervening residential areas and civic centre as well as all the adjoining industrial undertakings. This dual power arrangement provides a stand-by or alternative source of supply to all parts of the scheme, as well as a more effective distribution in the two industrial areas. Each boiler plant is designed for the generation of high pressure steam, being of water tube type and equipped with economisers, superheaters and air pre-heaters. By use of mechanical stokers and an electrostatic precipitator, up to 98 per cent. of any grits or fines carried over in the flue gases will be removed, resulting in as clean a chimney emission as anywhere in the country at the present day. Coal will be serviced from railway sidings and elevated to high level bunkers, gravitating to the stokers as required.

The District Heating Scheme

Heat distribution to the dwellings and other buildings will be by hot water circulated by pumps located in the plant houses and a number of sub-stations. Twin trunk mains connect the two boiler houses, and branches from these connect to the sub-stations, from each of which a three-pipe-system conveys water to the buildings to be heated. This system provides separate flow pipes for heating and domestic hot water, with a common return pipe.

The temperature of the water which supplies both the heating and the domestic hot water systems will be varied by means of mixing valves in the various sub-stations. Thus the temperature of the water in the heating system could be varied to suit the day-to-day heating requirements without interfering with the temperature of the domestic hot water.

It should be pointed out that the heating system has been designed as a closed circuit, that is to say, once it has been filled, the water remains in the pipes, and is circulated round and round the system. This will enable steel pipes to be used, as corrosion or deposition on the pipe surface will be avoided.

Type of Heating Installations

The heating installations in the houses and flats will be of the conventional type in which the heat is emitted to the rooms by means of radiators and any exposed pipes. The greater part of the heat is to be provided by radiators and each will be fitted with a valve so that it may be turned on or off by the householder as desired. In general, installations in the houses and flats will, on the score of neatness, be designed on the single pipe system.

Domestic Hot Water System

Each house will be equipped with its own separate domestic hot water system. This system will be of the conventional type except that the usual back boiler is dispensed with and, in lieu, a calorifier fitted inside the normal cylinder. The calorifier will be in the form of a copper coil through which the hot water from the district heating mains circulates and imparts its heat content to the surrounding water in the cylinder. The water passing through the coil is then returned to the district heating system for re-heating and re-use.

The scheme provides for the cylinder in each dwelling to be large enough to store forty gallons of hot water so that, after overnight heating up, this amount of hot water will be available first thing in the morning. It is proposed that the water should normally be heated to 130 deg. F. The scheme has been prepared on the basis of an average consumption of 45 gallons of hot water per day in each dwelling. This is in excess of the average quantity used at present by the Wythenshawe householder.

Service and Cost

It is estimated, from surveys carried out amongst the tenants on the estate, that the average cost of heating and hot water supply per dwelling by traditional methods is 6s. 11d. per week, based on pre-war fuel consumptions, and prices ruling in 1945. The average fuel consumptions were found to be five tons of coal, 2,000 cubic feet of gas and 130 units of electricity per annum, producing approximately 278 useful therms of heat.

The district heating scheme has been designed to meet the following space heating conditions, over an average period of 35 weeks per annum, in addition to the domestic hot water service previously described :—

60 deg. F. with 1½ air changes per hour in the living room, parlour and dining room.

55 deg. F. with 1½ air changes per hour in the hall, staircase and landing.

50 deg. F. with one air change per hour in bedrooms.

55 deg. F. with one air change per hour in the kitchen.

The bathroom is warmed from the hot water system.

This service would provide the equivalent of 761 useful therms per annum compared with the 278 obtained by the older methods of heating. Furthermore, in view of the income available from the sale of by-product electricity, it is considered that the district heating service could be provided at a charge of 5s. 1d. per week to the average dwelling, based on 1945 construction and operating costs. This charge would vary from approximately 1s. 9½d. per week for a single-person flat, to 7s. 1d. per week for a four bedroomed parlour type house. This average charge of 5s. 1d. per week for a district heating service compares with the estimated cost of 6s. 11d. per week for heating and hot water supply by traditional methods ; it is considered that the difference of 1s. 10d. per week is ample to cover the cost of any supplementary heating in the form of gas or electric fires which may be desired.

The Initial Installation

In a large-scale district heating and generating scheme it is not strictly economical to install the heating and generating plant until a substantial number of houses have been erected and occupied. In such cases there must be an initial loss of from about £45,000 to £55,000 which can be reduced to the lower figure in a development programme of about 2,000 houses per year, when the commencement of plant operation is timed to coincide with the completion of the first 2,000 houses. In the meantime it is more economical to provide these houses with immersion heaters, and a supply of electricity sufficient to heat 17 gallons of water per day during the seven colder months, than to accelerate the earlier capital charges on a plant working to small capacity. To recover the initial loss of £45,000 over the subsequent ten years would mean an additional weekly charge per house of about 2d. per week, and a proportionate charge on public buildings.

Generation of By-product Electricity

The greater part of the electricity used in this country is produced in power stations in which steam is the motive power and the electricity generation is effected in turbo-alternator sets. The steam is fed at high pressure to the turbo-alternators which extract energy from it and convert this energy into electricity. As a result of this conversion the steam, when it reaches the turbine exhaust, has been lowered in pressure and temperature. It still, however, contains its latent heat, which is dissipated by means of cooling towers or in warming the water of a nearby river. This wasted heat often amounts to upwards of two-thirds of the total heat in the steam and, consequently, even the largest generating stations in the country have an overall thermal efficiency of only about 30 per cent. It is this latent heat in the exhaust steam which it is proposed to use in the Wythenshawe scheme, to heat the water for circulation in the district heating service.

With this arrangement the only fuel which is required for generating the electricity is the additional amount necessary to put into the steam the work-producing energy absorbed in the turbines and converted into electricity. After allowing for boiler and all other losses, the overall efficiency of converting this heat into electricity is in the region of 75 per cent.

It is estimated that the saving in fuel at Wythenshawe by the combination of thermal and electric generation would amount to 22,000 tons of coal per annum. The amount of electricity which can be generated under the scheme is estimated at over 75,000,000 units per annum and the generator output during the half-hour peaks of the period of annual maximum demand will be 31,300 kW. The wholesale value of this electricity is in the region of £169,000 per annum.

Estimated Capital and Operating Costs

The capital cost of the whole Wythenshawe district heating scheme, based on prices ruling in 1945, is estimated at £2,427,000. This is made up as follows :—

	£
Land	8,400
Building work in boiler houses, etc.	265,490
Plant	1,255,402
Mains, trunk and secondary	528,345
Ducts for mains	369,220
Total	£2,426,857

The annual operating costs have been estimated as follows :—

	£
Annual Charges on Capita Cost	151,905
Maintenance and administration	40,422
Labour	16,550
Coal	136,310
Ash removal, water, etc.	1,786
Losses due to empty houses, etc.	641
Rates	31,549
Total annual expenditure	£379,163

Income :—

	£
7,945 dwellings at an average charge of 5s. 1d. per week	107,209
Public buildings	43,550
Industrial Buildings :—	
Heating	43,166
Process Steam	17,828
Sales of Electricity	168,601
Total income	£380,354

Advantages to Householders

(*a*) A district heating service will provide a constant supply of hot water day and night.

(*b*) It will provide a degree of warmth and comfort hitherto unknown, and within the range of the average householder's pocket.

(*c*) It will warm not only the rooms, but the hall, staircase and landing, and so prevent cold draughts when the room doors are opened and shut.

(*d*) It will enable the occupiers of the larger houses to obtain, during the winter, the full benefits of the size of the houses, as they cease to be restricted to the use of only one or two rooms because of heating difficulties.

(*e*) The living rooms and kitchen will be warm when the family comes downstairs in the morning.

(*f*) The buildings will be kept dry and free from damp. This feature is specially advantageous in the Manchester area due to climatic conditions.

(*g*) In case of sickness, an even warmth can be maintained in the bedroom without the emission of dirt or adding to the labours of nursing.

(*h*) Clothes and household linen can be kept fully aired.

(*i*) There will always be a hot pipe in the bathroom for drying towels.

(*j*) The heating of the hot water in the summer months will be effected without the discomfort of having a fire or sectional boiler in the kitchen or living room.

(*k*) It will obviate the worry to the householder of having to leave a fire alight and banked up when he goes out.

(*l*) It will be labour-saving.

(*m*) It will be cleaner; there will be less dust.

(*n*) It will be safe—particularly to young children.

(*o*) It will increase the available floor space due to the omission of a number of fireplaces and chimney breasts.

(*p*) It will minimise trouble from burst pipes in frosty weather.

(*q*) It will avoid carting through the estate thousands of tons of coal and ashes, the dust and grit from which would be scattered while handling into and out of consumers' premises.

Advantages in General

The smoke nuisance is particularly serious in Manchester. Its effects are aggravated because the hills which surround the city on three sides encourage the condensation of moisture in the atmosphere.

The advantages which the citizen will obtain from the installation of a district heating system at Wythenshawe would accrue chiefly from the resultant reduction in smoke emission from domestic and industrial chimneys in the area. This aspect is particularly important in view of the proximity to the estate of the Corporation's Sanatorium at Baguley, and the Ringway Airport.

The ratepayers will obtain the monetary benefit resulting from a lesser expenditure on the upkeep of the property. Clean air in Wythenshawe will mean a considerable saving in respect of decoration and general structural maintenance. There will also be a considerable annual saving to the ratepayer in the cost of heating public buildings. This saving is estimated at £14,500 per annum.

As regards the adoption of a large-scale district heating scheme, Wythenshawe has a particular advantage in that approximately half the estate consists of houses already developed, but heated by traditional methods, and comparable in size with those projected. This affords a freedom of choice for the resident which enables a direct comparison to be made between the two methods of heating.

Mr. A. C. Pallot, described and discussed the "Memorandum on District Heating as Applied to Small Housing Estates." He said that the District Heating Sub-Committee (chairman, Sir Alfred Egerton) of the Heating and Ventilation Reconstruction Committee set up by the D.S.I.R., was preparing a detailed report on the subject of district heating. The Memorandum, which dealt with district heating as applied to small housing estates, had been written at the request and with the approval of the Egerton Committee and would form part of the main report of that Committee which it was hoped would be available for publication towards the end of the year. In his speech Mr. Pallot discussed the general advantages of district heating and the scope of the Memorandum. The Memorandum dealt with standards of heating, choice of site, heating requirements, choice of heat medium, installation in dwellings and costs. The Memorandum can be obtained from the Ministry of Fuel and Power.

Mr. E. L. Leeming, M.Sc. (Tech.), M.Inst.C.E., spoke on the "Proposed District Heating Scheme at Urmston." The Urmston Council was proposing to erect an estate at Flixton consisting of some 1,300 new dwellings comprising houses, maisonettes, flats and bungalows for aged people. A district heating scheme for the estate had been designed by Messrs. Donald Smith and Partners and joint discussions on it had taken place between the Ministry of Health and the Ministry of Fuel and Power.

It was proposed to supply heat for all rooms and domestic hot water from one central heating station. One open fireplace was to be provided in each house in the living room and it was anticipated that a small gas or electric unit placed there would be sufficient for topping up heat in the coldest part of the winter. Radiators would be fitted in bedrooms, kitchens and living rooms, the bathroom being heated by a towel rail. The room temperatures would vary from 58 degrees F. in the working kitchen to 62 degrees F. in the living room and 52 degrees-54 degrees F. in the bedrooms and hall. These temperatures would apply when the external temperature was at 32 degrees F. The domestic hot water supply would be circulated in copper pipes at a temperature of about 130-140 degrees F.

The consumption of domestic hot water was calculated at 40 gallons for a 3-4 bedroom house of 5-7 persons; 35 gallons for a 2-3 bedroom house for 4-5 persons; and 30 gallons for a 1-2 bedroom house of 2-3 persons.

Public buildings would be included in the scheme and this made possible a more economic price for the supply to the houses. There would be two new primary schools and one secondary school, as well as shop premises and flats. It was proposed to build a community centre and it was possible that this might have a small covered swimming pool.

The layout also provided for the erection of blocks of garages and greenhouses and for allotment and small holdings which could be supplied with heat during the winter months at a modest annual or weekly charge.

On the east of the estate there was a considerable number of existing houses built at a density of not more than 10 or 12 to the acre, which it was anticipated would be included in the scheme. Enquiries from householders had already been received.

As it would be necessary to supply hot water to the first houses to be completed, and it would not be economic or even practicable to provide the final heating station and equipment until a later stage of the development, it was proposed to put up a temporary boiler plant to serve the first 200 houses. It might be necessary, however, to give a supply to an even smaller number of houses at first and it was therefore proposed to install a small heating unit within one of the buildings which would later serve as a block of garages for the estate.

It was estimated that when the scheme was finally completed, the average cost per house for loan repayment and running costs would be approximately 4s. 6d. per week, excluding topping up heat in specially cold weather; this would depend, however, on the speed at which the estate was completed and the public buildings brought into use.

It was anticipated that at the present rate the whole of the estate would be fully developed within 3-4 years, by which time the charge would be stabilised to show a slight excess of revenue over expenditure.

It appeared that the average householder in Urmston paid 9s. 6d. per week for solid fuel in the six winter months and 5s. 6d. per week for the six summer months—an average of 7s. 6d. per week throughout the year. This compared very unfavourably with the estimated price for district heating at 4s. 6d. per week as a steady charge, winter and summer; the additional cost of topping up in the coldest part of the winter should not exceed an average cost of about 9d. per week. It was further estimated that the installation of a district heating service would mean a saving of from 1-2 tons of coal per house per annum as compared with the conventional methods of burning raw fuel.

FINAL CLOSING SESSION (CENTRAL HALL, WESTMINSTER) THURSDAY, 10 OCTOBER

THE MINISTER OF FUEL AND POWER, THE RT. HON. E. SHINWELL, M.P., IN THE CHAIR

GENERAL CONCLUSIONS

Mr. Hartland Thomas, M.A. [*F.*], reported the general conclusions of Section G, "Modern Heating and the Architect." He said : " Our discussions naturally at the present time have concentrated around the housing problem but we also bore in mind the heating needs and practices for other buildings. I have three highlights from our section—they are different in kind—but I must put them in this way. First, we regard as very important and we welcome with the greatest pleasure the undertakings that came to us several times from the Minister of Health to the effect that consideration of costs were not going to be put above more efficient heating apparatus and more efficient insulation auxiliaries. Secondly, there is something of a controversy at the present time between the advantages of background heating plus topping-up over full heating. I have to report that very important and good evidence was brought to our Section in favour of the background heating and topping-up being so efficient as full heating. The third important matter I want you to treat seriously, though it may at first seem frivolous, that is, we want to suggest that a questionnaire or Gallup poll, is conducted amongst the G.I. brides in the U.S.A., in order to give us a comparison between housewives' opinions of British and American heating systems. From having brought architects into this conference it is clear you want us to consider the long-term aspect. As architects there is nothing in our work we can do that is going to make an important saving this winter, or even next. We considered fully the comfort of the human being. It was clear to us that the heating problem related to the human being is not the heating problem at all but the control of the cooling of the human body. Nevertheless, we have to look far ahead, for planning is the architect's job. We are very conscious of the importance of thermal insulation and very conscious of the importance of working efficiency in the apparatus we select for our buildings and we regard the present housing programme as an opportunity to increase the trend of improvement in those respects. I bring to you an offer from the architects to yourself as Minister of Fuel and Power. In the past six years we architects have been accustomed to make considerations of public policy a major factor in our work of planning buildings. We have worked with the Minister of Works' standards and war-time building regulations beside our drawing boards. That is something rather new and if you choose to give us a similar line from the coal utilization point of view I can assure you we will follow it as readily as we have played ball with the Minister of Works in matters of war-time building. To be more specific, there are two aspects of this offer. One, as between different materials, some require more coal to make them than others. As between two kinds of brick, you can have a brick that takes three times as much coal to make as another brick. If you will give us a lead that you want us to choose materials from that point of view, please, Mr. Minister of Fuel and Power, consult the Minister of Works and give us that lead. The other aspect is that we in the past have been offered more than one medium for providing heat in buildings, namely, gas, electricity and solid fuel. Before the war we had absurdities like the all-electric house. We noticed with pleasure that the experts concerned with the different heating media are no longer in this extensive competition, but they were suggesting to us, to our great pleasure, combined apparatus using heat from fuel in the best way. We think this is a sign of the times, and we want from you, if you care to make a ruling, guidance as to where we should use the different forms of heating media. For instance, will you tell us that heating by electricity is something we should avoid specifying or something we should promote ? "

The Minister of Fuel and Power thanked Mr. Hartland Thomas, He said the architects' recommendations and comments would receive the Ministry's most favourable and sympathetic consideration.

In his concluding remarks the Minister said :—

" There is general agreement that this Conference has proved its worth in spreading a wider knowledge of the facts, in the presentation of new ideas and in the recognition of the vital part that fuel efficiency methods can and will play in maintaining and improving the industrial prestige of the nation.

The search for additional labour in the mines in order to repair the weekly wastage, which is considerable, has been persistent. But here we suffer from years of disparaging and gloomy propaganda. Now the process must be reversed and we must demonstrate that coalmining can be made safer and more attractive and offers opportunities for engaging in an essential and honourable calling.

The other important factor, which has been fully appreciated by the Ministry of Fuel and Power for over twelve months, has been the steady rise in consumption. In gas and electricity it has exceeded the expectations of everybody. In gas and electricity, but particularly, as regards electricity, the rise in consumption compared with 1938 has been phenomenal. It is because of this exceptional rise in consumption that we are compelled to ask for the exercise of economy and the elimination of waste. There has been a persistent campaign directed to this objective. But leaving exports aside, and no one is more anxious than I am to revive our export trade in coal, what stands between us and the provision of all the requirements of inland consumption is a little more than another 100,000 tons a week. Again I must repeat that the present labour force, provided we can repair wastage, is capable of producing sufficient for our purposes. Deep coalmining is hard work and must be met, and I say to this Conference the newly-appointed members of the National Coal Board who will be in charge of the industry very shortly and who are entrusted with the task of reorganising on modern lines, must receive the utmost encouragement and goodwill. This fuel problem must be solved and, in spite of many difficulties—most of which are not of our making—but derive from a disordered and ugly past, we are determined that it shall be."

Sir Stafford Cripps, President of the Board of Trade, declared: " If at this stage of our reconversion and build-up of our exports we suffer an interruption due to fuel and power, it will be the gravest thing for our future national preservation. Apart from the workers, who would suffer from the dislocation of production and employment, it would have the most adverse effect on our export markets and would mean an even smaller supply of consumer goods in the home market. It is touch and go whether we shall get through this winter without some hold-up, either of domestic or industrial supplies." Sir Stafford said supplies of goods for the home market were still falling far short of requirements. Exports had reached their pre-war volume but before we could restore the pre-war volume of imports we must increase exports by another 75 per cent. " We have neither the man-power nor the materials to proceed on anything like the basis of our pre-war production," he declared. He said we had done well in our switch-over from war to peace. British scientists and technicians who led the world in war-time should switch their services and ingenuity to peace-time production. He hoped a new attitude towards research would inspire the post-war people of Britain.

FESTIVAL OF ST. LUKE THE EVANGELIST, PATRON OF THE ARTS

The **President, Mr. L. H. Keay, O.B.E.,** represented the R.I.B.A. at the service on 18 October in St. Margaret's, Westminster. The service was conducted by the Rev. A. J. Wilcox, assisted by Canon S. A. Alexander and the Lord Bishop of London.

It will be recalled that the service last year was held in St. Paul's Cathedral and that the object and purpose of the celebration of the Festival of St. Luke—the 18 October—is " to provide an occasion on which the lovers of the Arts can get together and rejoice that they are given sight and perception with which to see and appreciate lovely things, and also to be glad and grateful that the artists have acquired skill of hand and brain which enables them to make beautiful things."

With the order of the service on this occasion, the second year in succession, a fine reproduction of *St. Luke painting the Virgin* was presented and is reproduced on this page. The Lord Bishop addressed the congregation upon the religious outlook upon art from early days, and initially, the only, gradual inception of the idea that Christianity, standing as it does for beauty, was allied from first to last with the Arts. At the reception in Central Hall, Westminster, which followed the service, some 250 guests were received by Mr. A. L. Cowtan, the Master of the Painter-Stainers' Company, the Mayor of Westminster, the President, Mr. L. H. Keay, O.B.E., and other representatives of Royal and learned societies.

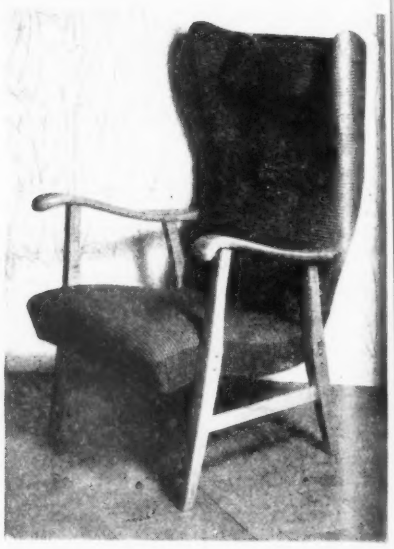
At a short meeting which followed the reception, upon the motion of the chairman, Mr. Gerald Moira (President, the Royal Institute of Oil Painters), seconded by the Bishop of London, a resolution " that it is vitally important to train the young to understand that an appreciation of the fine arts is an essential factor in the full development and education of a civilized citizen," was carried unanimously.

The President, Mr. L. H. Keay, moved a second resolution which was seconded by Mr. Percy Hill and carried unanimously.

The President said : " I do not think I can let to-day pass without some reference to the very moving and fine address delivered by the Lord Bishop of London. As you know, we are forbidden as a profession from advertising, but when I heard the opening words of the Processional Hymn I realised that all those engaged in art were inspired, and that we should let the trumpets blow, so that the people of this country should know what is good and what is bad in Art. We have to-day, on the Festival of St. Luke, joined together in a corporate service of thanksgiving in the historic Church of St. Margaret's standing as it does within the shadow of the more historic Abbey, wherein lie the remains of sculptors, painters and craftsmen of all sorts, and we have listened to the Lord Bishop's excellent address. While we have done that, surely we have ourselves given thanks for the inspiration and guidance which have been vouchsafed during this present year, and which have brought forth the magic and wonder of the various arts. It is, I think, fitting that the architects of this country should be represented at such a gathering. I am afraid I do not know very much about the history of this country, nor the history of mankind, but I suppose that at some time in man's history there came the impulse to someone to suggest that, whilst primitive man designed and built his own shelter, there were some of us who thought we were slightly more gifted and could direct the way in which that shelter could be built; these were, I suppose, the forerunners of architects, leaving the labour to the forerunners of the present great building industry. But that, surely, was not enough. Man realised that the home and the building which enshrined his life was not in itself sufficient to provide an outlet for emotions which man feels, whether it is in one perhaps for art, or in another for music ; therefore it is so important that we as architects should meet with you to-day, and have the opportunity of a mutual exchange of opinion ; that what we build should enshrine the wonderful works of others engaged in the fine arts. If that had been done, if we had realised the dignity of simplicity, the beauty of proportion, that our own work is not perhaps all-sufficient, that shelter is not enough for the people of this country, how much more beautiful would our towns and countryside be at the present time ! There is the possibility—there is the ability within this country if we would only use it. It is a mistake to imagine that beauty is costly. Decoration and beauty are the two cheapest things in the world. If we only use the skill which exists here to-day we can build a country worth the sacrifices the country has made. I therefore move that in the design of modern houses, however mass-produced, utility is not enough, but that beauty should be an integral part of the home. I would add this rider : that much beauty can be introduced into the cheapest house, without additional expense."

Upon the motion of His Worship the Mayor of Westminster, and carried unanimously, a copy of the President's and Mr. Moira's resolutions are being sent to the Minister of Health and the Minister of Education respectively.

Stand in birch: top and drawers in elm or walnut.



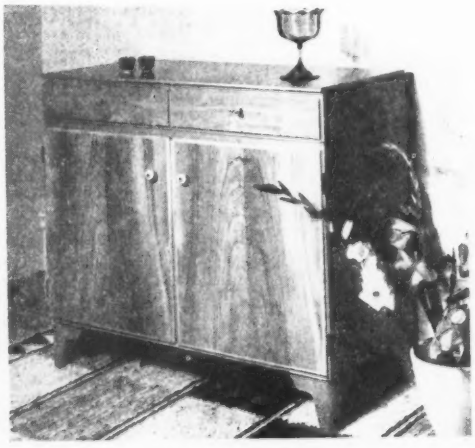
Frame in birch.

EXHIBITION OF SWEDISH FURNITURE AT THE BUILDING CENTRE, LONDON

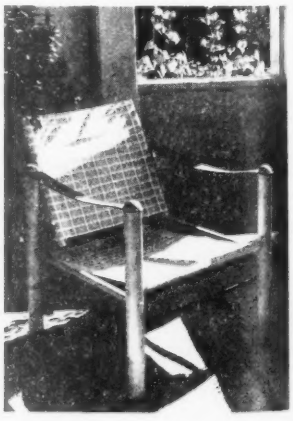
The Exhibition of Swedish home furnishings, opened at the Building Centre in London last November, showed that utility, comfort and simplicity are the aim of Swedish designers, as will be seen from the accompanying illustrations. Most of the furniture is in light-coloured woods, to which the cheerful fabrics form a good background. Another feature is that the articles of furniture can be obtained dismantled and packed in crates, ready for easy re-assembly by the purchaser. Thus in Sweden the expression "getting a home together" takes on a literal meaning, and a screwdriver is all that is needed to create a charming environment.

Some of the articles are designed on the unit system; for example, cupboards can be fitted on top of a table with drawers, and other variations are possible without in any way creating a patchwork effect. This, of course, is not a new idea, but our Swedish friends have evidently studied it carefully, to ensure that the parts, excellent in themselves, will take their place in a satisfactory whole.

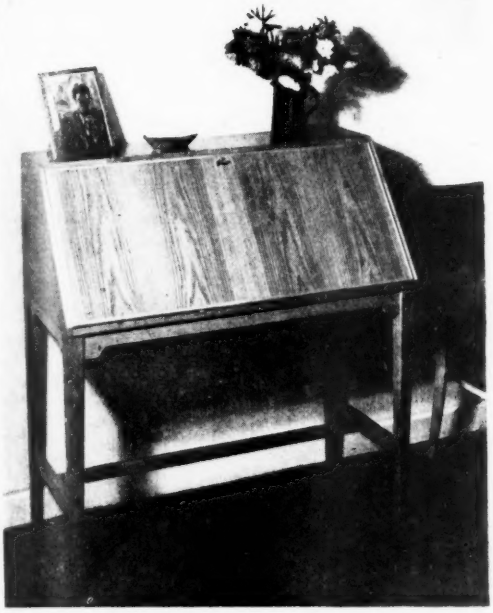
In birch.



In birch: doors and drawers in birch or elm.



In birch: leather arms and straps.



In birch : lid in birch or elm.

In birch.

In birch : with panels in elm.

In birch : doors and lid in birch or elm.

In birch : top in pine, birch or elm.

NEW TRAINING CENTRE AT KIDBROOKE, KENT

FOR THE MINISTRY OF LABOUR AND NATIONAL SERVICE

On 5 November last the Government Training Centre at Kidbrooke was formally opened by Mr. Ness Edwards, Parliamentary Secretary to the Ministry. This Centre is the first to be built in the London and South-Eastern Region, and takes its place in the Government's permanent programme which aims at increasing the supply of skilled labour, particularly in the building trade, by giving specialised training to those passing out from the Services. Emergency Centres have been in operation for some time, but the permanent Centres, of which fifteen are already in operation and eighteen in preparation, will conform to one standard design and layout, so far as the conditions on each site will allow, and Kidbrooke may be regarded as typical.

Each Centre will occupy some ten acres, with buildings disposed about large quadrangles in which outdoor work can be done. The shops where the training is given are built with red brick cavity walls supporting ranges of metal windows, and are divided transversely into two bays by steel stanchions and girders carrying a pitched roof, partly glazed, the unglazed portion being lined internally with fibreboard supported on metal T-shaped members, and covered externally with corrugated iron sheeting. The floors are of concrete with granolithic finish. Training in the various branches of the industry is carried out in separate shops, in which pleasant working conditions are maintained by high-level hot water heating, supplemented by electric heating fans. The administrative blocks fall in line with the general design of the shops but are differentiated by being given flat roofs, and asphalt takes the place of granolithic for the floor finishing.

The courses cover a period of six months, but after four months the learners are as far as possible put on actual building work outside the Centre, though they are still under the guidance of their instructors, and this has been found greatly to increase the interest taken by the men in their work, as they feel they are then engaged on the real thing; indeed, practical and useful work is the keynote of the courses; for instance, after preliminary training on making scale models in the joinery shop, the more advanced workers construct windows and standard joinery for incorporation in actual buildings, while it is possible that when the new Houses of Parliament are completed some of the stones will not be unacquainted with Kidbrooke training.

Slating and Tiling.

The Carpenters' shop, showing half-scale model of staircase.

In the plastering course there is inevitably a tendency to sameness in the work, but the interest of the learners is maintained by letting them work on more ornate subjects such as swags and mouldings, though with what effect on their æsthetic sensitivity is perhaps beside the point. With the same idea in view, graining and varied colour schemes provide the painters with an outlet for their enthusiasm.

Weekly progress reports are made on each learner, and at the end of the course these enable the placing officer to assess the extent to which the man has benefited from the instruction, and also gives the prospective employer an idea of what he may expect from his new hand. But the Centre's interest does not end at this point, for there is a post-graduate period of fourteen months wherein the de-Centralised worker is given facilities by his employer for further training and working experience, and during this time wages are paid. It will thus be seen that these training Centres provide an excellent source of supply to the building trades, and as they each pass out some 1,000 or so operatives a year, the issuing stream should help the industry onward to full employment if the supply of materials maintains a similar flow.

At the inaugural ceremony Mr. Ness Edwards gave an outline of the Government's views and intentions with regard to the training and placing of those coming out of the Services, and said that the programme of houses, schools, sanatoria, and so on, would require every pair of hands that could be put to the work. Mr. W. H. Forsdike, President of the National Federation of Building Trades Employers, proposed the vote of thanks to Mr. Ness Edwards, which was seconded by Mr. B. Sandercock, Vice-President of the National Federation of Building Trades Operatives, who said that the Trade Unions are prepared to accept all those passing out from the Centres.

NEW YEAR NONSENSE—I

The four pages which follow are for frivolous readers only. Others should continue at page 93

"PIFFLICATIONS"

The following is reprinted by permission from the Manchester Society of Architects' Newsletter to their members in the Forces, June 1944. Apologies are due to those members who have already seen the following effusion, but it seems to deserve a wider audience than the Service members of the Manchester Society, for which reason it is included in our New Year Nonsense.

"It's not good enough," said the new typist (looking at the draft specification which she had been left to type out.) "Mr. Blank's writing is awful, and it really doesn't make sense at all. I do wish he had read through it for me before he went out. However, here goes."

1. The work consists of clearing all exacting strictures and in wrecking a building without horses and stables.
2. The drawings referred to in this spiffication comprise
   (*a*) A Black Plan.
   (*b*) A Grand Floor Plan.
3. The procession on the site will be allowed as soon as the Contract is let.
4. If reproved by the Architect the gravel and sand excavated may be used on the Contractor.
5. The hole on the works must be computed and sanded over within six weeks of the order to convince.
6. The contractor shall sit out on the site and shall be responsible for any terrors that may arise and for making necessary alterations if in a curate.
7. Keep an important four men on the job during all waking hours.
8. For the use of the four men the contractor must correct and keep in repair a private officer and all drainings must be kept in a large drawer.
   Provide boards for and count the working drawings.
9. The contractor is to provide all fools, plants and tickle for the job and is to remove same at completion.
10. Proper sanitary conveniences for the use of the weakmen are to be provided.
11. Work which is defective will be condoned by the Architect.
12. The workmen must not wonder about the premises unless absolutely necessary. The contractor shall make special provision to enforce this role.
13. The contractor is to allow for making good all damage due to filthy workmanship.
14. All old materials, dirt, rubbish, etc., to be renewed from time to time.
15. Remove surface oil and whirl and deposit it where infected.
16. Excavate for stenches (and easement if any) to the depth shown on the drawings.
17. Excruciate all planking stuttering and shaving necessary.
18. Cement to be Yiddish of depraved manufacture.
19. Lime to be fishily burnt and free from perfection.
20. The corncrake to be composed of a grey gate of brick or stone, and sand and a deficient quantity of water and to be mixed on a bearded platform.
21. Drains to be laid with glazed stoneware twisted pipes with all bands and functions and to be nested in the presence of the architect.
22. Give no ice to the vocal authority and pay all fees for connecting to sour pipe.
23. Interesting chambers to be built in common brick.
24. Eternal walls to be built with a fair pace in rusty brick.
25. All walls to be bulged throughout to the precarious heights and pretentions shown in the drawings. No footlings are required.
26. Phlegmish bond to be used and all curses to be well shushed up.
27. Lime water to be of an approved colour (may be mixed by hand or in a pill).
28. The roof to be constructed with four trestles as shown. Cover the roof with 1 inch bearding and well burnt patent tites on buttons and belting. Clean out all garters at completion.
29. Timber for joining to be round and clean and to be free from flakes, loose or dead nuts.
30. Cased frames to windows to have withered and chick throated cills with a paralysed iron water bar let in.
31. The doors to be 2 inches in two loafs; mouldy both sides, hung with 2 pairs of rotten butts to 1½ inches jammed linings.
32. All lime to be properly faked—
    For ceilings use a coarse stiff composed of . . . and add to every 3 cub. ft. a good long cow hair. The hair to be well beaten and evenly distributed on the coarse stiff.
33. Expensive metal lathing to be used over wool lintels and to be fixed with galvanised steeples.
34. Use sheet glass for gazing generally except for the bathroom window which is to be obscene. The paint for all woodwork to be composed of benign old white lead.
35. Knit slime top and taint all woodwork with two coats of boils. Each coat of paint to be a distinct pint, and sample pints to be submitted to the architect for his approval.
36. The promises to be made clean at completion, all widows to be washed inside and out and all pawings cleaned.
37. The employer does not bend himself to accept the lowest or any fender.

J.P.N.

Items from Official Correspondence

Claimant to War Damage Commission: "I think it is only fair to return your cheque for £515 as I have been paid on two previous occasions and feel that this is all one ought to expect."

....

War Damage Commission to Claimant: "The item of £18 14s. 6d. for repairs to lantern light must be disallowed as not proper to Part I. Lamps, lanterns and the like are domestic fittings insurable only under Part II of the Act."

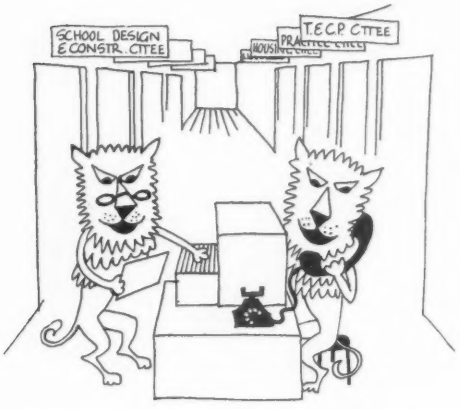
....

Ministry of Works (endorsing licence): "No wall plastering can be allowed. Breeze slab partitions, etc., may be coated with lime putty or other substitute"

....

War Damage Commission to Claimant: "Reference your claim of £4 10s. for cost of borrowed light, please furnish particulars and state from whom the light was borrowed."

LIFE AT NUMBER 66

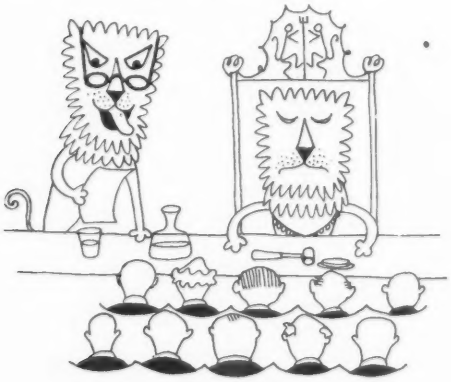


NEEDS OF THE ARCHITECT

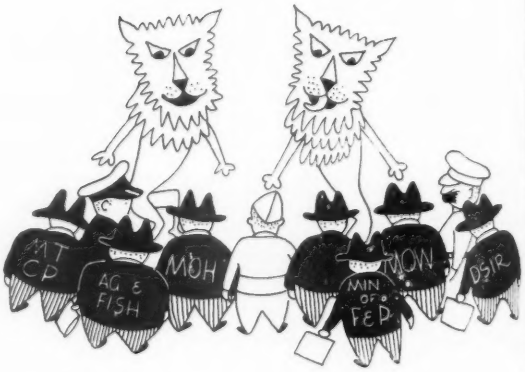
HELPING THE SALARIED ARCHITECT

MAINTENANCE OF PROFESSIONAL INTEGRITY

FOREIGN RELATIONS



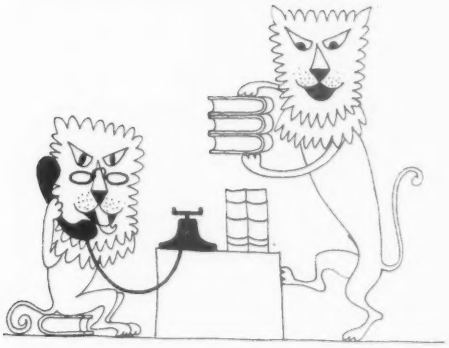
CONFERENCES



ADVICE TO GOVERNMENT DEPARTMENTS

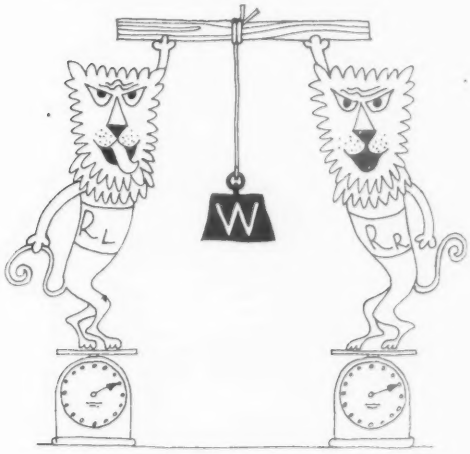
NEW YEAR NONSENSE-II

PUBLIC RELATIONS

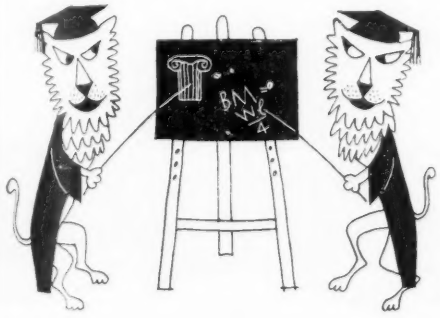


LIBRARY SERVICE

JOURNAL SERVICE



BUILDING SCIENCE



ARCHITECTURAL EDUCATION

SOME OTHERS

NEW YEAR NONSENSE-III

MISLEADING LAW CASE

Smith v. Jones, Brown and Robinson

Judgment :

The plaintiff in this case practises as an architect, which term, I understand, indicates that his name is enrolled on the Register of the Architects' Registration Council of the United Kingdom and is therefore conclusive proof of the plaintiff's claim to the title, which otherwise might have been in doubt.

The action is brought for infringement of copyright in respect of an " architectural work of art " which term is included in the definition of " artistic work " under the Copyright Act.

The defendants are another architect, that architect's client and the contractor who erected the building which is alleged to infringe the plaintiff's copyright. It is also alleged that the copyright in the plaintiff's drawings is infringed, these being in the lawful possession of the defendant architect's client and to which it is said that architect had access, and used for the purpose of the erection of the infringing building, any omissions from those drawings being supplied by particulars taken from the building erected from them. I am informed that there were many such omissions.

In deciding this case I have had to consider whether or not the plaintiff's design was an " architectural work of art," because if I arrived at the conclusion that it did not come within that definition then the claim so far as it affects the copying of the actual building would fail.

I have been more or less assisted in this aspect of the matter by a considerable body of technical evidence called by both plaintiff and defendants. This evidence was so totally opposed that I cannot say that it has been of great help. The evidence for the plaintiff appeared to indicate that such an " architectural work of art " had never before been designed, whilst the defendants' witnesses were all agreed that there never had been such a design. I have therefore had to be guided to a large extent by a combination of this evidence coupled with my own view of the judicial meaning to be given to the definition in the Act. Attempts were made in the argument before me to refer to the debates that took place during the passage of the Bill through Parliament, but it cannot be too often said that it is the function of a judge to interpret the words used in an Act without any regard to what legislators may have meant to say. Legislators have been often considerably astonished when told by His Majesty's Judges what they have said.

It may be convenient at this point to consider the position of the third defendant, the contractor, Mr. Robinson. Mr. Robinson appeared to have a grievance. He said, to use his own words, that in the adjustment of his account for the erection of the offending building, he had had a raw deal and that his profit had been so cut down that there was no margin for any damages that might be given against him. To safeguard his position he said he was delaying payment of the quantity surveyor's fees for adjusting the account. I express no opinion as to whether Mr. Robinson was justified in this action, but he appears to have the instincts of a Briton. It did suggest to my mind, however, the possibility of making the quantity surveyor a defendant, on the ground that he had used drawings which were copies of those the copyright of which it is alleged has been infringed. This point is not before me for decision although it afforded me a pleasant reflection during the somewhat tedious and certainly lengthy arguments to which I might otherwise have had to give more of my attention. To return to Mr. Robinson, however, whatever the result of my judgment, I do not think he should suffer any further reduction in his profit than he has done and I dismiss him from the action. The plaintiff must pay Mr. Robinson's costs but the quantity surveyor's fees which Mr. Robinson still holds must be treated as a set-off, these being money paid to Mr. Robinson by the second defendant of which the plaintiff should have the benefit. If I am wrong in this decision the parties have their remedy and the quantity surveyor may have his.

I now turn to the alleged infringement of the copyright in the plaintiff's drawings and on this point the plaintiff has failed to satisfy me that there has been infringement. I accept the evidence given for the defendants that there were so many omissions from the drawings that they can hardly be said to have existed, and I decline to hold that there can be copying of non-existing matter.

The remaining point in the case is whether the plaintiff's design is an " architectural work of art " but it is unnecessary for me to consider this point having regard to the effect, in my view, of two sections of the Act. One section provides that copyright shall subsist during the life of the author and for fifty years after his death. During the plaintiff's evidence I carefully studied his demeanour and deportment and I have reached the conclusion that he is not alive and has not been for the last fifty years. I give a very wide interpretation to the word " life " as used in the Act and the plaintiff comes within that interpretation. For example he admitted in cross-examination that he had never heard of the word " functional " as applied to architecture. This is clear evidence to my mind that the plaintiff cannot have had any life during the last fifty years and must therefore be deemed to have been dead. The other section of the Act provides that an action for infringement must be brought within three years from the date of the infringement. Having regard to my interpretation of the other section to which I have referred the action must also fail in regard to this section. The copyright having lapsed by effluxion of time it follows that there can be no infringement.

I dismiss the action with costs so far as the first and second defendants are concerned and I have already given my judgment in respect of the third defendant.

I apprehend that my judgment will come as a surprise to the parties. Indeed, it surprised me, but I am glad to have been able to avoid giving a decision as to whether the plaintiff's work was " artistic work " and perhaps to have been the means of providing an opportunity for a higher Court to exercise its ingenuity in effecting a like avoidance.

Smell's nice !

THE THIRD BUILDING CONGRESS

Organised by the Building Industries National Council, 19-20 November, 1946.

The Third Congress of the Building Industries National Council was held at Central Hall, Westminster, on 19 and 20 November, and was opened by the Minister of Works, The Rt. Hon. George Tomlinson, M.P. The Congress met to consider the practical ways and means by which the vast programme facing the building industries in the immediate future and for many years ahead can be carried out. The President, Mr. L. H. Keay, O.B.E., spoke at the first session on Tuesday, 19 November, and Mr. W. H. Ansell [*F.*], introduced the second session in the afternoon of the same day, followed by Professor J. D. Bernal, M.A., F.R.S. The third session was opened by the Minister of Health, the Rt. Hon. Aneurin Bevan, M.P., and the fourth session took the form of an open discussion on the whole of the proceedings. Mr. F. W. Purse, President of the Building Industries National Council, took the chair.

The Minister of Works addressed the Congress in some detail on the present position and future prospects of the supply of materials and components for the national building programme and the effect of the materials position upon the productivity of the building industry. Speaking first of the supply of basic building materials, the Minister envisaged that some shortages, for example excavators and digging equipment, which are hampering production, would do so for a long time. He warned his audience that much of the shaping of future prospects depended upon regular and increased conservation of the country's fuel, particularly coal. As long as major materials were relatively scarce it would be essential to control their distribution to ensure that materials in short supply were directed into national priority channels.

The President, Mr. L. H. Keay, O.B.E., said it was common knowledge that the labour force of the building and civil engineering industries was steadily approaching that of the immediate pre-war period and we might therefore expect the output of these industries to be nearly that of 1939. But although the labour force was nearly 90 per cent. of that before the war, the difference in output was far in excess of 10 per cent. There were many reasons for this, but the Congress was only concerned with one, the lowering of the standard of production directly attributable to shortage of basic materials and components made from them. It was obvious that production of materials and therefore output had not kept pace with the expanding labour force. It was equally obvious that the time would come—and in some parts of the country it had already arrived—when production of certain materials was outstripping the labour available.

The necessity for conserving such materials as were available for more essential work had led to the introduction of rationing and licensing. The greater the shortage of materials, the keener must be examination of applications involving their use. Engaged on this scrutiny were officers of technical knowledge who, instead of assisting in production, or planning ahead to ensure the output when production of materials reached maximum, were being employed on purely negative work of restriction. Licensing quickened the wits of the black marketeers.

The President said it was easy to criticise but difficult to suggest practical remedies for the difficulties by which we to-day found ourselves surrounded. The best remedy was work and still harder work, together with some easily worked scheme by which operatives received fair consideration for their additional effort. Increase in output would not be achieved so long as shortage of materials and components existed. Until operatives were able to get all they wanted and *when* they wanted it, we should not achieve the output required for them to build and rebuild on a scale we desired and knew to be necessary.

"We are told by some, with little experience," the President said, amidst applause, "that the industry needs complete reorganisation in order to increase output. Some reorganisation might be long overdue, but I sometimes wonder if 'planning' has not been overworked. We talk of planning production and distribution in regard to the whole of the industry. If by planning we mean 'Increase the production of materials and so speed up the erection of buildings they are intended to be used in,' then I say let us have it." The President warned his audience, however, that they should beware of those who sought to reorganise long-tried methods and those who, by their lack of experience, might disorganise it. Some people were apt to concentrate on the solution of certain phases of the problem rather than the solution of the whole of the problem. The President drew a mental picture of a great block of flats which could be rendered habitable if soil pipes could be obtained and said this was not a state of affairs which inspired either the architect or the craftsman to greater effort. Such a picture was one which all in the industry had to watch all the time. He had more recently watched the output of the bricklayers fall from 350 bricks a day to 250. This item alone was a serious thing.

The President pleaded for greater responsibility to be given to those actually engaged upon great works of construction and reconstruction. Conditions changed rapidly and in some localities the production would be increased if quick decisions could be made, but it was time that those on the spot were allowed to solve the problem in their own way. Quick decisions on the spot might lead to the continuance rather than the interruption of production.

Mr. W. H. Ansell [*F.*], opening the second session on the place of traditional and new forms of construction, said W.B.A.'s should be abolished by a stroke of a Ministerial pen and so "save millions of unnecessary strokes of other people's pens." Controls which fettered production must be lifted and master builders, operatives, architects, engineers and quantity surveyors allowed to breathe freely again. Mr. Ansell paid tribute to the co-operation the Government had received at the hands of the building industry as a whole during the war years, and expressed the view that there was no reluctance to shoulder a fair share of the burdens now facing all branches of the building industry and allied professions. He vigorously deprecated the amount of correspondence now involved in even the most elementary building undertaking, claiming this to be on an average five times as much as pre-war.

Unanimity was essential if co-operation was to be exploited in its purest sense, and by that he meant "working together." But co-operation must be unhampered by excessive and time-wasting administrative requirements. Mr. Ansell said amid laughter, "There are to-day far too many people authorised to say 'No' and not enough authorised to say 'Yes.'"

Advocating as early as possible a return to traditional methods of construction when the immediate post-war needs were fulfilled, Mr. Ansell cited a very recent report of the L.C.C. which claimed that houses were now being built in the proportion of three non-traditional dwellings to one traditional dwelling. The building industry and, indeed, architects particularly, should submit this to very searching investigation. Our main effort should be to encourage the highest possible quality consonant with speed. This effort should be placed back as soon as possible in the hands of the craftsman instead of the motor-car and aeroplane manufacturer. Neither must it be forgotten that there are still perfectly sound stone quarries in England. The old craft of masonry could still provide simple stone-built cottages which would in their own localities make the most valuable contribution to housing. He challenged those concerned, particularly "that section of the community anxious to be pleasant to plastics and our official scientists" to show that the cost of a prefabricated

house was not far in excess of a traditional building. Indeed, had anybody yet been able to give a figure which was a proper yardstick for the cost of a prefabricated dwelling?

He concluded by saying "Every age should make its own contribution to the building heritage in this country. What is our contribution going to be in fifty years' time? Will it be a welter of tawdry and fading emergency buildings possessing neither the charm of youth nor the grace of age or will it be traditional English homes, well designed, soundly built, well fitted and worthy to take their place in English traditional architecture?"

Professor J. D. Bernal, M.A., F.R.S., defended the new forms of construction. He first joined with all the previous speakers in expressing the country's immediate need of houses. Mr. Ansell had rightly questioned whether in pursuing that immediate need we were not going to get something which in the long run we, or at any rate, our children, were going to regret. He thought the answer to that question lay fundamentally in how far the building industry, the architect and the scientist were prepared to work together. He had been inside and examined most of the accepted modern designs of prefabricated domestic construction and expressed the view that most of them were nearer to tradition than many houses erected in extremely bad and unpractical taste during the 15 or 20 years immediately preceding the war. Tradition was moreover an ever-changing thing. It was in any age influenced by new methods and technicalities. We must remember that the first prefabricated house was built about 1790. Then, as now, the customer ultimately decided tradition. The problem of how far tradition must be allowed to dictate the precepts of improved methods, new materials and so on, must be approached impartially and scientifically. Prefabricated construction was apt to become the unwilling butt of stunts and ideals and therefore to be laid open to a heavy barrage of criticism undefended by the ramparts of experience and experiment which was on the side of traditional building. This was particularly marked in the U.S.A., where you had people spraying concrete over balloons, hacking a square hole in the "set" masterpiece and asking law-abiding people to live in them. In these stunts, however idealistic and humane some of them might be, the fundamental functions of a house were sometimes overlooked. Walls had dual purposes. They must not only support the roof but they must keep out the weather. Some people overlooked their third usage, sound and thermal insulation. The walls of traditional pre-war houses sometimes overlooked at least two of these factors.

He claimed that the principal cost in putting up a traditional house was in building it up, from the foundation, brick by brick. The ordinary house of to-day weighed 140 tons. Those 140 tons had in most localities to be taken in lorries to the site and then that 140 tons has to be lifted up piece by piece by slow motion to the height of the house. At its best this was slow motion in a country which had an immediate need of 4,000,000 houses and a reserve need within the next 25 years of 12,000,000, and it could not be disputed that a great proportion of this slow motion was nullified by prefabrication.

There was style, even tradition, in prefabrication. No less than 1,300 different varieties of prefabricated house had at some time or another been examined by the Ministry. This had been whittled down to a short list of 40 suitable types and out of those 40 no less than 21 different types were in process of manufacture and erection to-day. In reply to Mr. Ansell's challenge concerning the cost of a prefabricated dwelling, Professor Bernal said this was now being fully investigated. The individual cost could only be ascertained by working out the total costs on a statistical basis on a sufficiently large scale to let the figures mean anything. When this was done it was hoped to be possible to show whence the heaviest costs came.

There were two ways of arriving at the ideal prefabricated house. One was by going on trying and perhaps in 150 years something good would emerge: the other way was by scientific trial and effort arriving at a design which was the best expedient for the times in which we lived, times when with 4,000,000 to 12,000,000 houses to build, an industry of any size would be well occupied for many years to come. Shortage of tiles and shortage of labour were only temporary difficulties. Bricks and other materials which used coal were a very different proposition. It was an open secret that the prospects of increased fuel in this country during say the next 25 years were not sufficiently happy to envisage our being able to produce cement, bricks, and many other materials which were an integral part of "traditional building" in the purest sense of the word. Nor, claimed Professor Bernal, was it desirable that if we had the coal, we should sacrifice the time, when people were needing homes so badly, which traditional building would take.

Returning to his theory of scientific experiment, Professor Bernal said that the best material with which to build a house was air. "There is no substance yet invented which has a better thermal resistance than air," he said further. "Materials we use are all expensive and, I suggest, sometimes new-fangled, ways of trapping air. Bricks are not as useful as the holes in the bricks which trap the air." Professor Bernal said we must take an objective view of a house as somewhere in which to be comfortable, somewhere in which we could enjoy our lives. We wanted now a house which had a fair amount of insulation backed up by easily produced materials, and he thought that the ideal material existed and was in process of development. Ferro-concrete in this respect in an improved form might be the answer. He was thinking of something of 30-40 lbs. per cu. ft., not the 60-80 lbs. being now used. We should have walls which would give us roughly twice or three times the thermal insulation we had to-day.

Professor Bernal concluded by saying, "Try out, in spite of competition, in spite of commercial pulls, in spite of vested or State interests, what is most economical. Scientists are absolutely willing to try out one method against the other. They might even disregard the one which has necessarily most beauty or the one which satisfies certain purist prejudices because a great many things which we regard as necessities are, in fact, prejudices. We can try out all these different methods. If the traditional methods have the virtues claimed for them, they will win. Scientists have no axe to grind. If, on the other hand, newer methods have the best virtues they will win. All we scientists ask for is a fair field for the favourite."

After the Discussion, **Mr. Alister G. MacDonald** [*F.*] said, "It has been suggested that new methods of construction are not so beautiful as the old traditional methods. I have never heard such rubbish. A thing has not necessarily to look like a Gothic cathedral to be beautiful. Mr. Ansell and I and any other architect worthy of his salt are at one when saying that traditional and æsthetic considerations do not enter into every architectural problem. There is a place for traditional methods and a place for new methods. Do not jeer because houses are 'coming off the belt.' This congress is not here to argue the most efficient methods of producing houses. There are other buildings to be erected as well as houses in the new era on the brink of which we stand. We must build schools, universities, colleges, great libraries, sports centres, youth centres, community centres, almshouses, factories. In 25 years' time you will still need prefabrication, not only of houses, but to meet the urgent needs of the people; so let us believe that whatever type of building we adopt for the future, whether it be domestic or otherwise, whether it is traditional or 'comes off the belt,' it must be something of which our children will be proud. Let us be traditional in the æsthetic sense of wanting our children to say with pride, of a bridge, a symphony, a ship or a prefabricated house, 'My father made that.' The only way to ensure that pride shall be present is to get down to scientific research and æsthetic appreciation of what we intend to do."

The Minister of Health said on the whole the housing picture was satisfactory, though the number of houses completed had a tendency to fall behind the number under construction. He planned to give the building industry a target for the number of houses he expects it to build in 1947 and promised full co-operation from the Government in achieving this target.

The Minister warned that all the Government's plans for next year would be frustrated unless there was more discipline in the building industry.

Sir Thomas Bennett [*F.*] at the Fourth Session deprecated a continuance in peace-time of the war-time practice of diverting all classes of workmen, whatever their experience, to large building contracts and jobs alien to their customary work of maintenance; he advocated a team spirit in the building industry if the construction of houses was to proceed apace.

Speaking of town planning, it was essential that town planning proposals should be crystallised as rapidly as possible in order to avoid delay in starting the practical work. Detailed and irritating controls of architects' drawings was as hindering as control of materials. The Government should give some indication of the probable time at which it could release materials for building contracts other than houses, because the building industry could not in the long run live by housing alone. If that period was, say, two years, then it was not too long to prepare certain projects of a complicated character essential to the community and often needing protracted and complicated land and tree surveys, examination of machinery and long-term planning in specialised branches of the industry. Payment on results must not be adhered to so rigidly as to exclude the æsthetic demands of craftsmanship, diversity of standards, the nature of operations and many other factors. Some incentive to the workman ought to be found, but more work on his shoulders should not mean more profit for his employer; one of the ways was co-partnership.

THE SEVERN ROAD BRIDGE

Consulting Architect: Sir Percy Thomas, O.B.E. [*F.*].
Consulting Engineers: Messrs. Mott, Hay and Anderson, MM.I.C.E.,
in association with Messrs. Freeman, Fox and Partners, MM.I.C.E.

The proposed Severn bridge, the design of which is now being considered by the Royal Fine Art Commission, will be the largest suspension bridge in Europe. Its span of 3,000 ft. compares with those of the four largest United States bridges: The Golden Gate (4,200 ft.), the George Washington (3,500 ft.), the Bronx-Whitestone (2,300 ft.) and the Oakland, San Francisco (2,310 ft.). In addition to the centre span, there will be two side spans of 1,000 ft. each. The vertical clearance for shipping will be 110 ft. above high-water mark near the towers and 120 ft. in the centre. The piers will be about 200 ft. long and about 60 ft. wide and of concrete faced with granite near the top. They will support the steel towers to carry the main cables and will rise to about 450 ft. above high-water mark. Each tower will consist of two legs, about 30 ft. square, joined together by panels at roadway level and at about 70 ft. above it. In the centre of the panel above the roadway the arms of Wales will be picked out in bright colours on the English side and the arms of England will be similarly depicted on the Welsh side. The remainder of the steelwork will be painted light grey.

The bridge is designed to carry a maximum load of 150 tons. There will be two road tracks each 22 ft. wide, two cycle tracks 9 ft. wide and two footpaths 6 ft. wide. The total length of the bridge and the approach roads on both sides of the Severn Estuary, including a bridge over the River Wye, will be about eight miles. The total cost will be £7,500,000. The approach roads have been planned to connect the main road from Gloucester to Bristol (A38) on the east side of the Estuary with the main road from Gloucester to South Wales (A48) on the west side. The bridge will thus form an important link in the future road development of this area.

Very large wind forces have to be taken into account in the design of such large bridges, and the Ministry of Transport is engaging a team of scientists from the National Physical Laboratory to carry out tests in a specially-designed wind tunnel, in which a 52-ft. long model of the proposed bridge will be set up, so that the effect of wind striking the bridge from any quarter may be observed.

PRACTICE NOTES

EDITED BY CHARLES WOODWARD [A.]

IN PARLIAMENT

North and South Wales (Trunk Road)

Asked if he would make a statement as to the possibility of an early consideration by his Department of a new trunk road linking North to South Wales, the Minister of Transport replied: As I informed the hon. Member in reply to a question on this subject on 13 May last a new road on the lines suggested would be both difficult and extremely expensive to construct. In reply to supplementary questions the Minister said that there were other road works in Wales with greater priority over this proposal and that no responsible highway authority had yet proposed this development. (28 October 1946.)

War Damage Payments

Asked what surplus there is in the War Damage Fund for houses, chattels and businesses respectively, the Parliamentary Secretary to the Treasury replied:—There is no War Damage Fund, and no surplus. Payments already made exceeded receipts by nearly £150 million at the beginning of this financial year, while a sum of several hundred million pounds will have to be met for deferred payments, and outstanding claims. (28 October 1946.)

Building Timber

Asked what steps are being taken to assess the suitability for its purpose of timber being imported for the housing programme, the President of the Board of Trade replied:—Every effort is being made to buy abroad the maximum quantity of timber in specifications suitable for the housing programme, and British sawmills, converting imported German logs, are instructed to produce the largest possible amount of building sizes. Timber is distributed through merchants whose function it is in the light of their experience of such matters to sell, against licence, the timber most suitable for a particular housing requirement. (28 October 1946.)

Planning Authorities and Landowners (Agreements)

Asked what is his policy with regard to agreements between joint planning authorities and local owners of land, the Parliamentary Secretary to the Minister of Town and Country Planning replied:—All agreements made between landowners and local planning authorities require my right hon. Friend's approval and are considered on their merits. General policy, however, is to approve such agreements wherever their provisions are in harmony with the essential planning requirements. (29 October 1946.)

Outline Planning

Asked whether he is now in a position to state the new policy in conformity with which joint planning authorities should prepare their new outline schemes, the Parliamentary Secretary replied:—No, Sir; but my right hon. Friend hopes shortly to be in a position to issue a series of advisory handbooks to guide local planning authorities generally on the essential features of outline planning. In the meantime, our Regional Planning Officers are available to advise planning authorities on any immediate problems. (29 October 1946.)

Land Restrictions (Compensation)

Asked whether he is aware that many persons have, in the past, bought land with a view to development, relying on the fact that it was scheduled for development under the interim planning scheme; that his department are recommending that much of this land should now be included in the rural zone, and what compensation is to be payable to purchasers of such land, the Parliamentary Secretary replied:—My right hon. Friend is aware of the position. Under present law these owners, who had no justification for relying on proposed provisions of a scheme which had not come into operation, are not entitled to any immediate payment of compensation, but he hopes, before long, to introduce legislation dealing comprehensively with the question of compensation for restrictions on the use of land.

Greater London

Asked if he will, in order to expedite the development of housing schemes, at the earliest possible date, indicate those areas within the scope of the Greater London Plan which he approves for housing development and those he disapproves, the Parliamentary Secretary replied:—My right hon. Friend is prepared to indicate areas which he can approve for housing development on the submission of proposals by the appropriate local authority. Further surveys have been or are being made at his request by joint planning committees in the more difficult areas to ascertain what land is suitable for housing development. The results of these surveys are examined by my right hon. Friends the Minister of Town and Country Planning and the Minister of Health, and their views conveyed to the authorities concerned.

Asked which authorities in the region of the Greater London Plan have revoked operative planning schemes and are now controlled by Interim development Orders, the Parliamentary Secretary replied:—No operative scheme in the Greater London Area has yet been revoked although my right hon. Friend has approved resolutions to revoke operative schemes in Luton and Acton in regard to the whole or part of the areas to which they relate. Further, the borough councils of Ilford and Chingford and the urban districts of Chigwell, Thurrock and Haslemere have passed resolutions to prepare varying schemes for the whole or part of the scheme areas, and pending the coming into operation of the varying schemes the provisions of the operative schemes have been suspended and interim development control reimposed. (29 October 1946.)

Building Work (Cost)

Asked the total value of the building work under contract in Great Britain at the latest date of which he has a record; and what percentage of this cost is attributable to additional expenses brought about by regulations and controls imposed by the Government, the Minister of Works replied:—The total value of contracts over £5,000 on which work was in progress at the end of September was just over £500 million. Regulations and controls are imposed by the Government in order to secure the best use in the national interest on limited resources at a time of great pressure of demand and to check the tendency towards price increases. Without them the cost of building would be far higher than it is. (29 October 1946.)

Belgian Bricks

Asked the loss involved per house where his Department sells Belgian bricks at market prices when acquired at prices in excess of the cost of home-produced bricks, the Minister of Works replied:—The approximate cost of Belgian bricks of English size at port in this country exceeds the controlled price for comparable home-produced bricks by an amount which varies from port to port. The average excess is about £3 10s. per thousand bricks, and the loss per house, if Belgian bricks only are used, would on the average be in the neighbourhood of £70. I would add that the Government do not contemplate adding to their existing contracts for Belgian bricks which are expected to run out next March. (29 October 1946.)

Temporary Civil Servants

Asked how many, and what categories of, temporary civil servants are still subject to the Control of Employment (Civil Servants) Order, and how many of them have been released since the date of the order on appeal to National Service officers and local appeal boards respectively, the Financial Secretary to the Treasury replied:—All non-industrial civil servants employed in Great Britain, except those of 60 years of age, those normally employed for less than 30 hours a week and those whose employment is controlled under the Essential Works Orders. The number subject to the Order is approximately 400,000. Up to 30 September 1946, National Service officers had granted release to 2,751, in 59 of which his decision was reversed on the recommendation of a local appeal board. The number of civil servants granted their release after appeal to a local appeal board was 2,166. (29 October 1946.)

Town Planning Schemes

Asked how many local planning schemes are awaiting his approval, what is his intention with regard to them; and what the approximate cost of revision will be, the Parliamentary Secretary replied:—The number of planning schemes awaiting approval is 211. These schemes will in many cases require revision in view of the changed outlook on the objects to be secured by planning schemes and the prospect that new legislation will make it practicable to secure those objects. It is not possible at this stage to estimate the cost of this revision. (29 October 1946.)

Acquisition of Land (Service Departments)

Asked whether he will make a statement on the policy of His Majesty's Government concerning the acquisition of land by Service Departments and whether he will institute a public inquiry into the principles of that policy, the Prime Minister replied:—It is the policy of His Majesty's Government that Service Departments should have available to them such land as is necessary for defence purposes; and that the determination of the land required should be settled on a considered balance of defence requirements on the one hand, and of civilian needs on the other. Adequate machinery exists to give effect to these principles, and I see no need for an inquiry.

Asked whether an assurance could be given that when land is acquired it will be acquired under the Act of 1945, which provides for the possibility of a public inquiry, rather than under other powers.

the Prime Minister replied that he would like notice of that detailed question.

Asked whether he would give an assurance to the House that the Ministry of Town and Country Planning will, at least, never be an "also ran" compared with other Departments when deciding these questions, the Prime Minister replied :—I can say all Ministers come to the post together on this matter ; I give my personal consideration to this, but I cannot say how they will finish. (4 November 1946.)

Houses and Land (Private Ownership)

Asked whether it is the policy of His Majesty's Government that private citizens should be encouraged to buy and own their houses and land, the Prime Minister replied:—In present circumstances, when prices are inflated by shortage, the Government's own housing efforts are mainly directed to providing sufficient houses to let at moderate rentals to those in greatest need. When the shortage is overcome and prices fall, the Government will give greater facilities for house ownership and they have already raised the ceiling for local authority loans for this purpose. On the question of land, in cases where the necessary land is acquired by the competent authority, as for instance for the replanning of areas of blitz or blight, or in the planning of new towns, it is the policy of the Government that the freehold of such land should, in general, remain in public hands. Apart from these cases, it is not the policy of the Government either to encourage or to discourage the buying of land by private persons. (4 November 1946.)

MINISTRY OF HEALTH CIRCULARS

201/46. 31.10.46. This Circular addressed to housing authorities in England deals with the timber shortage.

The maximum allowance for new houses, other than "cost-of-works" replacements, in future will be:—

Softwood: 1.6 standards per 1,000 superficial feet floor area.
Hardwood: 10 cu. ft. per dwelling } unchanged from present
Plywood: 450 sq. ft. per dwelling } maxima.

Sufficient home-grown hardwood for a 10 ft. length per house of close boarded fencing, not exceeding 6 ft. in height, will also be allowed.

The maximum allowance of softwood relates to a traditional house of 1,000 sq. ft. in floor area. Smaller traditional houses will have a proportionate reduction. Houses of a non-traditional type of construction generally require substantially less.

A Memorandum on Timber Economy will be issued shortly and the principal economies specified for house construction are :—(i) the elimination of timber joists and boarding throughout the ground floor, and the substitution of solid floors ; (ii) the elimination of timber from roofs of outbuildings, and the substitution of concrete or other flat roof construction.

These economies should be adopted at once for all housing schemes, which includes those now in preparation for which tenders have been received but timber licences have not yet been issued. Consideration should also be given to providing a higher proportion of houses with flat roofs, or to using materials other than timber for roof construction.

In the case of existing contracts where licences have been drawn for the whole of the necessary timber, the construction should proceed without any change in the present plans and specifications. Where only part of the total quantity of timber has been drawn, solid floors should be substituted in all houses on which construction has not begun. The most suitable surfacing materials for solid floors which are available in any quantity and at reasonable cost are: pitch mastic, mastic asphalte and quarry tiles. To conserve these materials they should be used, until further notice, in living rooms only; a granolithic or cement finish with a suitable hardener should be used at least in kitchen and hall floors.

Timber licences will not in future be issued for new houses when the tenders are approved unless it is clear that work is to begin in a short time, and the licences will only be issued when the timber is actually required.

Private Building

Timber licences for softwood will be granted in the case of houses erected by private enterprise strictly in accordance with the revised scale and on the same principles as are indicated above.

A building licence should prohibit the use of timber for the ground floor of the dwelling, and the type of flooring material used should be specified by the local authority.

MINISTRY OF WORKS CIRCULARS

P.I.73 (No. 119/46). Changes in Building Materials Prices. The Minister of Works has authorised an increase of 2½ per cent. in the current selling price of Welsh Slates, and the same increase in the current selling prices of Burlington Slate Quarries, one of the firms incorporated in the Westmoreland Regional Slate Committee.

These increases will become effective as from 5 November 1946.

PROFESSIONAL CHARGES. ACQUISITION OF LAND

Rules have now been made by the Treasury under the Eighth Schedule to the Town and Country Planning Act, 1944, and the First Schedule to the Acquisition of Land (Compensation for War Damaged Land) Rules, 1945. These Rules prescribe the amount of costs that a purchasing authority are liable to pay in respect of a claimant's surveyor in connection with the acquisition of an interest to which the Eighth Schedule applies. The Rules also determine the costs of an arbitration or reference under the 1945 Rules. Acquisition of Land (Compensation for War Damaged Land) (Costs) Rules, 1946. S.R. & O. 1946. No. 1450. Price 1d. net.

DISTRICT HEATING

A Memorandum on District Heating as applied to small housing estates has been issued by the Ministry of Fuel and Power and the Ministry of Works. The Memorandum contains tables of Capital costs and Annual costs.

MINISTRRY OF TOWN AND COUNTRY PLANNING

A Memorandum in connection with the New Towns Act, 1946, has been issued by the Ministry. It shows the application and modification of provisions of the Town and Country Planning Act, 1944. It is dated October 1946 and can be obtained at H.M. Stationery Office, price 10d., including postage.

R.I.B.A. SCALE OF CHARGES

In each copy of the R.I.B.A. Scale of Charges will be found a loose leaflet recommending that the Scale should be brought to the notice of the client at the earliest opportunity.

In the event of any disagreement between architect and client as to fees which results in an Action at Law, it is important that the client should have agreed that the Scale of Charges is the basis of the contract between him and the architect.

The Scale is not a legal Scale that can be enforced in the absence of such agreement, and though, in such cases, the Court may look at the Scale as evidence of reasonable remuneration if the work set out in it has been performed, it does not follow that every Judge will take this course. In a recent case where an architect was suing for fees based on the Scale, it was not pleaded that there was an agreement to pay fees in accordance with the Scale, and accordingly the Judge declined to look at it, even though both parties were willing that he should do so for the purpose of deciding the amount due to the architect. The Judge indicated that the Court could not, in the absence of agreement between the parties, sanction a mode of payment where the architect's duty conflicted with his own interest, or, in other words, the higher the cost of the building the greater the architect's fees. Accordingly the Judge would have valued the architect's work on a *quantum meruit* basis, but the parties agreed that the case should be remitted to an arbitrator, an architect, and it was so referred by consent of the Judge.

Payment of architects' fees calculated by a percentage on the cost of the building has been in existence for at least 170 years. In 1813 a Commission of Inquiry into the conduct of business in the Office of Works was appointed and this body found, after hearing a great deal of evidence, that 5 per cent. on the cost of the work was the recognised scale for an architect's remuneration. That this was a well-established custom appears from the fact that Sir William Chambers received 5 per cent. in respect of the building of Somerset House in 1777, and there is evidence before that date of such a charge.

This charge must have been made for many years by custom, because it was not until 1862 that the Institute published a scale which was contained in a document entitled "Professional Practice and Charges of Architects being those now usually and properly made." These rules of practice have formed the basis of successive Scales of Charges, and the general principles have been adhered to.

The principle of a percentage charge on the cost of the work is the subject of much criticism, but it has been the practice of the profession for many years. It provides a fair average remuneration for the professional man, and because the Scale is used by the great majority of architects it is fair to claim that it provides reasonable payment for services rendered.

In recent years there have been cases where the Court has taken the Scale as a guide and has even found a custom to exist in respect of the Scale charges for abandoned work. It may be, however, that it would be unwise to rely on every Judge being willing to look at the Scale for the purpose of deciding what is reasonable remuneration, and therefore architects are strongly urged to make the Scale the basis of their contract with clients at the time of their engagement.

NOTES AND NOTICES

NOTICES

The Fourth General Meeting

TUESDAY, 14 JANUARY 1947, AT 6 P.M.

The fourth General Meeting of the Session 1946-1947 will be held on Tuesday, 14 January 1947, at 6 p.m., for the following purposes :—

To read the Minutes of the third General Meeting held on Tuesday, 10 December 1946 ; formally to admit new members attending for the first time since their election.

To read the Council's Deed of Award of Prizes and Studentships 1947.

Mr. Anthony Minoprio, M.A., B.Arch., A.M.T.P.I. [*F.*], to read a criticism of the designs and drawings submitted for the Prizes and Studentships 1947.

(Light refreshments will be served before the meeting).

The Fifth General Meeting

TUESDAY, 28 JANUARY 1947, AT 6 P.M.

The fifth General Meeting of the Session 1946-1947 will be held on Tuesday, 28 January 1947, at 6 p.m., for the following purposes :—

To read the minutes of the fourth General Meeting held on Tuesday, 14 January 1947 ; formally to admit new members attending for the first time since their election.

Professor W. G. Holford, M.A., B.Arch.(Lvpl.), A.M.T.P.I. [*A.*], to read a paper on " New Towns."

(Light refreshments will be served before the meeting).

SESSION 1946-47

Minutes I

At the Inaugural General Meeting of the Session, 1946-1947, held on Tuesday, 12 November 1946, at 6 p.m.,

Mr. L. H. Keay, O.B.E., President, in the chair.

The meeting was attended by about 200 members and guests.

The Minutes of the Twelfth General Meeting of the Session 1938-39, held on 19 June 1939 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The President delivered his Inaugural Address of the Session.

On the motion of The Rt. Hon. George Tomlinson, M.P., Minister of Works, seconded by Dr. F. W. Dwelly, M.A., Dean of Liverpool, a vote of thanks was passed to the President by acclamation and was briefly responded to.

The President having alluded to the services of the immediate Past President, then unveiled and formally presented to the Institute the portrait of Sir Percy Thomas, O.B.E., D.L., J.P., painted by Mr. James Gunn.

Sir Percy Thomas briefly expressed his thanks to the meeting.

The proceedings closed at 7.15 p.m.

Minutes II

At the second General Meeting of the Session 1946-1947, held on Tuesday, 26 November 1946, at 6 p.m., Mr. Michael Waterhouse, M.C., B.A., Vice-President, in the chair.

The meeting was attended by about 90 members and guests.

The Minutes of the Inaugural General Meeting, held on Tuesday, 12 November 1946, were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the Chairman :—

As Fellows :

Mr. Leslie J. Bathurst.
Mr. Ellis E. Somake.

As Associates :

Miss B. G. Bryan-Brown.
Mr. Frank W. Holland.
Mr. A. M. Kemp.
Mr. A. D. Knapton.
Mr. Roy E. Owen.
Mr. Raymond Silcock.
Mr. Frederick N. Smith.

As Licentiates :

Mr. L. H. Green.
Mr. Joseph Stacey.

Mr. Richard Sheppard [*F.*], having read a paper on " Aspects of Post-War Building Technique," a discussion ensued, and on the motion of Mr. M. Hartland Thomas, M.A. [*F.*], Chairman of the R.I.B.A. Architectural Science Board, seconded by Mr. Robert Fitzmaurice, B.Sc. (Eng.), A.M.Inst.C.E. (*Hon. A.*), Deputy Chief Scientific Adviser, Ministry of Works, a vote of thanks was passed to Mr. Sheppard by acclamation and was briefly responded to. The proceedings closed at 7.27 p.m.

Revision of the R.I.B.A. Code of Professional Practice

The attention of members is drawn to certain amendments to Clauses 2 and 3 of the Code which, on the recommendation of the Practice Committee in consultation with the Professional Conduct Committee were approved by the Council at their meeting on 15 October 1946. The purpose of the revisions is to define the position specifically in regard to (*a*) advertisements in the " professional press," and (*b*) a directorship of a firm of auctioneers. In consequence, the Code now reads as follows:

CODE OF PROFESSIONAL PRACTICE

A member of the R.I.B.A. is governed by the Charter and Bye-laws of the Royal Institute. The following clauses indicate in a general way the standard of conduct which members of the R.I.B.A. must adhere to, failing which the Council may judge a member guilty of unprofessional conduct, and either reprimand, suspend or expel him or her.

Cases of unprofessional conduct not specifically covered by these clauses are dealt with by the Council having regard to the particular circumstances of the case.

1. An Architect is remunerated solely by his professional fees, and is debarred from any other source of remuneration in connection with the works and duties entrusted to him. It is the duty of an Architect to uphold in every way possible the Scale of Professional Charges adopted by the Royal Institute.

2. An Architect must not accept any work which involves the giving or receiving of discounts or commissions, nor must he accept any discount, gift or commission from contractors or tradesmen, whether employed upon his works or not.

An Architect may be architectural consultant, adviser, or assistant to building contractors, decorators, furniture designers, estate development firms or companies, or firms or companies trading in materials used in or whose activities are otherwise connected with the building industry, provided that:

(*a*) He is paid by salary or fee and not by commission.
(*b*) He does not either directly or indirectly solicit orders for the firm or company.

He may use his affix in connection with his appointment and his name and affix may appear on the stationery of the firm or company as architectural consultant or adviser.

His name and affix may appear in advertisements inserted by the firm or company in the Press provided that it is done in an unostentatious manner.

An Architect may be a director of any company, including a building society registered under the Building Societies Acts, the Building Centre, London, and the Building Centre, Scotland, except a company carrying on business as Auctioneers or House and Estate Agents or trading in materials used in or whose activities are otherwise connected with the building industry or engaged in the financing or erection of buildings.

His name and affix may appear on the notepaper of the company.

An Architect may not carry on or act as principal, partner, or manager of any firm carrying on any of the above excepted trades or businesses.

3. An Architect must not advertise or offer his services by means of circulars or otherwise, nor may he make paid announcements in the Press, except that:

(*a*) Advertisements respecting appointments open or wanted may be inserted in the architectural professional press providing they are directed only to members of the profession.

(*b*) One notice of change of address may be inserted in the architectural professional press.

(*c*) An Architect may notify his correspondents by post once of any change of address.

(*d*) Though there is no objection to an Architect allowing signed illustrations and descriptions of his work to be published in the Press, with reference to such illustrations or descriptions, it is contrary to professional ethics—

(1) To give monetary considerations for such insertions.

(c) To allow such insertions to be used by the publishers for extorting advertisements from contributors.

(e) An Architect may consent to the publication of a series of illustrations either in circular, brochure or book form, with or without descriptive letterpress, of any building or buildings for which he has been responsible, provided that—

(1) if advertisements appear, Clause 3 (*d*) (2) of the Code is complied with, and

(2) there is no attempt to distribute the publication to potential clients.

(*f*) An Architect may sign his buildings and may exhibit his name outside his office and on buildings in course of construction, alteration and/or extension provided that it is done in an unostentatious manner and the lettering does not exceed 2 inches in height.

If the client so desires the Architect's name may remain upon the building for a period not exceeding 12 months after its completion providing that the board does not display "To Let" or "For Sale" or similar notices. A notice may, however, indicate that the plans can be seen at the Architect's office.

Auctioning and House and Estate Agency are inconsistent with and must not form part of the practice of an Architect. An Architect must not become a member of or acquire any interest in a firm of Auctioneers and/or House and Estate Agents or a limited company carrying on any of such businesses or enter into any permanent working arrangement or partnership with any person who practises as an Auctioneer and/or House and Estate Agent or who is a member of any professional body representing such persons. He may, however, be employed as an architectural consultant, adviser or assistant, if paid by fee or salary.

(*g*) Architects who are appointed Surveyors to recognised estates* may announce land or sites or premises for sale or letting in connection with their appointments.

When Architects are acting as Surveyors or Town Planners in connection with the development of land, announcements may be made in the Press and on notice boards in connection with such development, provided that such announcements are made in an unostentatious manner.

4. An Architect must not attempt to supplant another Architect, nor must he compete with another Architect by means of a reduction of fees or by other inducement.

5. An Architect, on being approached to proceed with professional work upon which another Architect was previously employed shall notify the fact to such Architect.

6. In all cases of dispute between employer and contractor the Architect must act in an impartial manner. He must interpret the conditions of a contract with entire fairness as between the employer and the contractor.

7. An Architect must not permit the insertion of any clause in tenders, bills of quantities, or other contract documents which provides for payment to be made to him by the contractor whatever may be the consideration, unless with the full knowledge and approval of his client.

8. An Architect should not take any part in a competition as to which the preliminary warning of the Royal Institute has been issued, and must not take any part in a competition as to which the Council of the Royal Institute shall have declared by a Resolution published in the JOURNAL of the Royal Institute that Members must not take part because the Conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions, nor must he be associated in any way with the carrying out of a design selected as the result of a competition as to which the Council shall have declared by a Resolution published in the JOURNAL that Members must not take part.

Architects asked to take part in a limited competition must at once notify the Secretary of the R.I.B.A., submitting particulars of the competition.

Note.—A formal invitation to two or more architects to prepare designs in competition for the same project is deemed a limited competition. In the event of two or more architects being commissioned to prepare designs for the same project, and the full scale fee of 1 per cent. on the estimated cost up to £50,000, and ½ per cent. on the remainder being paid to each of the architects so commissioned, the project is not regarded as a competition contemplated by the R.I.B.A. Regulations for the Promotion and Conduct of Architectural Competitions.

9. An Architect must not act as Architect or Joint Architect for a work which is or has been the subject of a competition in which he is or has been engaged as Assessor.

An Assessor must not act as Consulting Architect, unless he has been appointed as such before the inception of the competition, nor in any other professional capacity in any matter connected with the work which has been the subject of the competition, provided always that he may act as Arbitrator in any dispute between the Promoters and the selected Architect.

If an Architect is officially approached by the Promoters for advice as to the holding of a competition with a view to his acting as Assessor, and eventually it is decided not to hold a competition but to appoint an Architect to carry out the work, the Architect originally approached in an advisory capacity is precluded from acting as Architect for the work in question.

10. It is desirable that in cases where the Architect takes out the Quantities for his buildings he should be paid directly by the client and not through the Contractor except with the previous consent of the client.

* The term "recognised estates" is intended to apply to family and trustee estates such as the Bedford, Grosvenor, Berners and Howard de Walden Estates.

The R.I.B.A. London Architecture Bronze Medal 1946

The attention of members is drawn to the Form of Nomination and the conditions, subject to which the award will be made, for a building built within a radius of eight miles from Charing Cross during the ten years ending 31 December 1946, enclosed with this issue of the JOURNAL. Any member of the Royal Institute is at liberty to nominate any building for consideration by the Jury.

Nominations must be sent to the Secretary R.I.B.A. not later than 28 February 1947.

The Annual Dinner 1947

The first post-war Annual Dinner of the R.I.B.A. will be held on Friday, 21 March.

Exhibition of Prize Drawings

15 JANUARY TO 12 FEBRUARY 1947

The Annual Exhibition of Designs and Drawings submitted for the Prizes and Studentships 1947 will be open at the R.I.B.A. from Wednesday, 15 January to Wednesday, 12 February 1947 inclusive. The Exhibition will remain open daily (Sundays excepted) free to the public between the hours of 10 a.m. and 6 p.m. (Saturdays 10 a.m. and 5 p.m.).

British Architects' Conference

DUBLIN, JUNE 1947

The next Annual Conference of the R.I.B.A. and its Allied and Associated Societies will be held at Dublin from 11-14 June 1947, inclusive.

The Royal Institute of the Architects of Ireland have in hand the preparation of a most attractive programme and particulars will be issued in due course.

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. Final Examination—Relegation in One Subject Only

Hitherto it has been a regulation that unless candidates pass in at least two subjects in Part II of the Examination they will be required to take the whole of Part II at a subsequent sitting. For the purposes of this regulation the Thesis does not count as a subject of Part II.

On the recommendation of the Board of Architectural Education, the Council have now decided that candidates who pass in one subject only of Part II of the Final Examination shall no longer be required to present themselves for re-examination in that subject. With a view to assisting ex-service candidates this decision will operate retrospectively.

ALLIED SOCIETIES

South-Eastern Society of Architects' Annual Luncheon at Brighton

Mr. Harold Anderson [*F.*], President of the South-Eastern Society, presided at the annual luncheon of the Society at the Royal Pavilion, Brighton, on 1 November. The President, Mr. L. H. Keay, O.B.E., was unable to be present owing to a prior engagement, but he was represented by the R.I.B.A. Hon. Secretary, Mr. A. L. Roberts, Mr. John L. Denman (Hon. Treasurer), and the Secretary, Mr. C. D. Spragg. This was the first post-war reunion of the Society.

Among others present were the Mayors of Brighton (with the Mayoress), Hove and Tunbridge Wells. Three counties, Sussex, Surrey and Kent are covered by the Society.

In his speech, Mr. A. L. Roberts (Hon. Secretary) insisted that beauty in architecture, as an integral part of the home, could be introduced without any additional expense and could be achieved as a matter of skilled arrangement. He read a message from the President which said: "It is a mistake to imagine that beauty is costly. Decoration and beauty are the cheapest things in the world."

The toast of "The Visitors" was proposed by Mr. Colin H. Murray [*F.*], Hon. Secretary of the South-Eastern Society of Architects, and responded to by Mr. William Teeling, M.P. Mr. Teeling voiced a plea for the preservation of the Regency terraces of Brighton and Hove. He urged that while the interiors might be modernised, the historic façades should be preserved. Some Regency basements in Hove had been condemned but their architects had not designed them for living accommodation. They had been designed for quite a different purpose, and Regency architects could not be blamed if people now elected to live in the basements and the local authority condemned them. He claimed that the destruction of such buildings would be both an æsthetic and financial loss.

The successful arrangements for the luncheon were organised by Mr. F. F. Howard [*F.*], Hon. Secretary, and his colleagues of the Brighton Chapter.

Bristol Society of Architects' Annual Dinner

The annual dinner of the Bristol Society of Architects was held on Tuesday, 5 November, at the Grand Hotel, Bristol, with an attendance of 110 members and guests. The President, Mr. L. H. Keay, O.B.E., the Lord Bishop of Bristol, Lord Methuen, Mr. S. E. Urwin [*F.*], President of the Wessex Society of Architects and Mrs. Urwin, Major and Mrs. Nelson Rooke, members of the local Joint Consultative Board, and Mr. C. D. Spragg, Secretary, R.I.B.A., were also present.

Lord Methuen proposed the toast "Architecture," spoke upon the historical and æsthetic value of architecture in the realm of art, and stressed that æsthetic considerations could not receive too high a place. He dealt at interesting length with the past, present and future architecture of local places, such as Bristol and Wells. Dealing with the historical background of current architecture, Lord Methuen said "the standard of taste during the XVIII century was a very definite thing; to-day, it is practically non-existent."

In replying, the President, Mr. L. H. Keay, O.B.E., emphasized the responsibility of architects to the community as a whole. He stressed that utility and functional treatment of buildings was not enough in itself, that classic and traditional development must not be ignored and yet must not be blindly and foolishly copied. He joined with Lord Methuen's sentiments in hoping for a renewal of the spirit of 17th and 18th century architecture.

Mr. P. Hartland Thomas [*F.*] (President of the Bristol Society) replied to the toast of the Bristol Society of Architects, which was proposed by Mr. A. A. Scull. Mr. P. Hartland Thomas recalled the past history of the Bristol Society extending back over nearly a hundred years, and advocated the importance of the development of personal talents and cultivation of a social sense among architects.

Mr. J. Ralph Edwards [*F.*] proposed the toast of "The Guests," which was replied to by the President of the Bristol Association of Building Trades Employers, Mr. J. H. A. Perkins.

MEMBERS SERVING WITH THE FORCES

Killed

DANIEL: R. C. B. A. [*L.*], Lieut. R.N.V.R.
MORTIMER: G. E., D.F.M. [*S.*], F/Lieut. R.A.F.
STEELE: W. G., [*S.*], F/Lieut. R.A.F.

Decorations and Distinctions

ASHWELL: B. J., M.C. [*A.*], Lieut.-Col. R.E. Again Mentioned in Dispatches.
MIDDLETON: ALLEN [*A.*]. Mentioned in Despatches.

COMPETITIONS

COMPETITION RESULT

Competition for Planning of the Hayling Beachlands

1. Messrs. R. O. Vine and C. M. Vine [*A/A.*].
2. Mr. Herbert Collins, M.T.P.I. [*F.*] and Mr. J. N. Calton.
3. Mr. S. C. Hurst [*L.*].

Shelter Competition

The London Passenger Transport Board invites architects to submit in competition designs for a bus-passenger shelter to replace the present utility war-time model.

Assessors: Prof. W. G. Holford, M.T.P.I. [*A.*], Mr. F. R. S. Yorke [*F.*], Mr. Thomas Bilbow [*F.*].

Premiums: £300; £100.

Last day for submitting designs: 8 January 1947.

Conditions may be obtained on application to the Chief Public Relations and Publicity Officer, London Transport, 55 Broadway, London, S.W.1. Envelopes should be marked "Shelter Competition."

Competition for the Extension of the Fife County Council Buildings

The County Council of Fife invite architects of British Nationality resident in Scotland to submit designs for alterations and extensions to County Buildings, Cupar, Fife.

Assessor: Mr. A. G. R. Mackenzie [*F.*].

Premiums: £500, £300 and £200.

Last day for submitting designs: 31 March 1947.

Conditions may be obtained on application to J. M. Mitchell, Esq., County Clerk, County Buildings, Cupar, Fife.

Deposit, one guinea.

GENERAL NOTES

A.S.B. Lecture at the R.I.B.A.

Wednesday, 1 January 1947, at 6 p.m.

"HOUSE FOUNDATIONS,"

Presented by W. H. Ward.

1. Common practice by no means satisfactory on clay soils.
2. Essential requirements.
3. Causes of Movements.
   - Weak soils—filling.
   - Unstable slopes.
   - Mining subsidence.
   - Swallow holes.
   - Climatic changes.
   - Trees and shrubs.
4. Site exploration and design in relation to above movements.
5. Construction efficiency and some non-traditional types of foundations.

Copies of the lectures of the A.S.B. which are held at the R.I.B.A. at 6 p.m., may be obtained one to two weeks before they are due to be delivered on application to the Secretary, Architectural Science Board, 66 Portland Place, W.1.

Franco-British Union of Architects

It was intended to resume the Annual General Meeting of the Franco-British Union of Architects from 20-24 September 1946, but gales in the Channel prevented the British members from landing at Dieppe.

The party of British members, which included Sir Percy Thomas [*F.*], Lieut.-Col. H. P. Cart de Lafontaine [*F.*] (Hon. Secretary-General of the Union), Mr. H. M. Fletcher [*F.*] (Chairman, British Section) and Professor Hector O. Corfiato [*F.*] (Hon. Secretary, British Section of the Union) and Mr. Thomas Tait [*F.*], embarked from Newhaven on 20 September for Dieppe. A violent gale raged for twelve hours and the ship carrying the party had to return to Newhaven after reaching the mouth of the harbour of Dieppe.

It was therefore decided to cancel this year's General Meeting and the Hon. Secretary of the British Section, Professor Corfiato, proceeded next day to represent the British members at the conference.

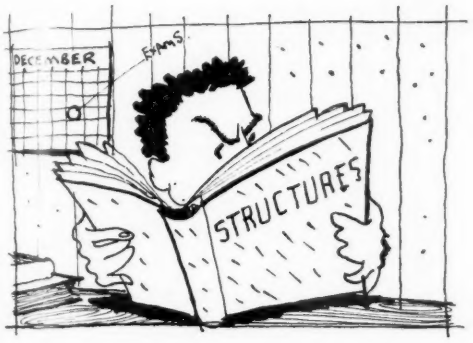
Rouen was the agreed centre for excursions to places of interest in Normandy and receptions, civic, ecclesiastical and private, were arranged for the architects during their tour. The official dinner was held on Monday, 23 September, at Mont Saint Aignan, with Mons. Chirol in the chair. A telegram was sent by the French delegates to Sir Percy Thomas, expressing their regrets at the absence of the British members and assuring the British section of the cordial friendship which formed the basis of all the meetings of the Union.

Maintenance Scholarships in Architecture

The Architects' Registration Council of the United Kingdom offer for award in June 1947 certain Maintenance Scholarships in Architecture. The scholarships will consist of a grant for the payment, in whole or in part, of the school fees and necessary subscriptions, instruments, books, etc., and, when necessary, a maintenance allowance not to exceed as a rule £100 a year. The scholarships will be renewable from year to year until the student has finished his or her school training. They will be available for Students of British nationality who could not otherwise afford such training to enable them to attend Architectural Schools approved by the Council. The scholarships will be available both for students who have already begun their training and for students wishing to begin their training. Scholarships will not be granted to Students who will be less than 17 *years of age on 1 October of the year in which the examination is taken.*

Particulars and forms of application may be obtained from: The Secretary to the Board of Architectural Education, Architects' Registration Council of the United Kingdom, 68 Portland Place, London, W.1. Copies of previous years' examination papers may be obtained on payment of 6d. The closing date for the receipt of applications, duly completed, is 1 February 1947.

SCHOOLS



AND

STUDENTS

President Visits R.W.A. Students' Club

The President, Mr. L. H. Keay, O.B.E., and Mr. C. D. Spragg, Secretary, R.I.B.A., accepted the invitation of the Students' Club Committee to visit the Bristol Centre on 13 November. They visited the studios where the students of the Centre were at work. After taking tea with the Committee, the President addressed the students, Mr. G. D. Gordon Hake [*F.*] Principal of the School, being in the chair. The President covered a wide field and stressed the need for an attitude among designers of simplicity and straightforwardness. He said that in this way the greatest architectural merit and beauty would be obtained.

Liverpool

An atmosphere of geniality is reported, and somewhat dubiously ascribed to the recent influx of ex-service "types." The emphasis seems to be chiefly on a series of affable social functions, including the notorious Architectural Society teas. A notable Christmas dinner is being arranged.

A lecture on "Some Formal Aspects of XXth Century Painting" was given by Mr. Bisson, of the Sandon Studios, and Mr. Charles Wheeler, R.A., speaking on "Architectural Sculpture," deplored the lack of it in modern buildings.

An exhibition of the work of students of the School opened in the Bluecoat Chambers on 1 December. In the School at present is another exhibition of American Georgian work which is authentically described as "elegant and extremely impressive."

No dance is being held this term because of lack of accommodation, but members of Fourth Year, now doing their period of office experience, hope to be called upon to act in the matter on their return in January.

Students' International Congress—Prague

The delegates of the Architectural Section of the International Union of Students held 14 meetings. Each delegate presented a report on the educational system in his own country, and explained the organisation of his local and national Architect Students' Association, but as some reports were incomplete, and not all countries were represented, it was decided that collection of information on this subject should form one of the tasks for the future.

It was agreed that to enable the Architectural Section to work efficiently it was imperative to have an organisation for carrying out their proposals until the next Congress assembled. It was therefore decided to submit to the Executive Committee for approval provisional proposals of a temporary nature, to be valid only until the next Congress, when the organisation and functions of the Section could be re-examined by the Executive Committee of I.U.S. and the Architectural Section.

These provisional proposals are as follows :—

1. The Architecture Section of the I.U.S. shall be a constituent part of the I.U.S., working within the framework of the I.U.S. constitution and according to its Bye-laws.

2. The aims of the A.S. shall be :—
   - (*a*) The development of cultural and professional relations between the architectural students of all countries.
   - (*b*) To collect and supply information concerning the methods of architectural education in all countries.
   - (*c*) To help in the creation of National Students' Associations in those countries where they do not exist.
   - (*d*) To organise exhibitions, meetings, and other activities to further international co-operation amongst architectural students.
   - (*r*) To represent I.U.S. at functions of architectural interest that come outside the scope of the main student activities of the I.U.S., i.e., at national or international architectural congresses.
   - (*f*) To co-operate through the Commission for Intellectual Co-operation with other faculty groups of the I.U.S.
   - (*g*) To carry out those general recommendations and special tasks proposed by the Commission for Intellectual Co-operation to all faculty sections.

3. All architectural students and architects who are members of the I.U.S. through their National Students' organisations may participate, hold office and vote in the A.S. of I.U.S.

4. There shall be elected at the last meeting of the architecture faculty meeting of every I.U.S. Congress, a chairman of the A.S. to remain in office until the following Congress ; the election of the chairman to be ratified by the Executive Committee of I.U.S.

5. The functions of the Chairman of A.S. shall be :—
   - (*a*) In general, to organise the activities of the A.S. and to fulfil the aims stated in clause 2.
   - (*b*) In co-operation with the department of the I.U.S. for Intellectual Co-operation to maintain and develop contacts with architectural students and architectural students' bodies in all countries.
   - (*c*) To be responsible to the Finance Committee of I.U.S., and to the Congress Council, for the finances of the A.S.

6. The Chairman shall have the right to form sub-committees to carry out any special activities of the A.S. on the recommendation of the A.S.

7. The Chairman of the A.S. shall be responsible to the Executive Committee of I.U.S. for the activities of A.S.

8. Should the Executive Committee of the I.U.S. at any time feel that the activities of the Chairman are not in accordance with the general activities of the I.U.S. or the wishes of the Architectural Section, it may recommend to the Council that a new Chairman be elected. The Council shall be empowered to perform such an election from nominations received from the architectural students within the I.U.S.

9. There shall be a Secretary of the A.S. permanently situated at the headquarters of the I.U.S. He shall be proposed by the local Architectural Students' Organisation, and approved by the Chairman of the A.S. This appointment shall be valid for the period between Congresses.

10. The functions of the Secretary shall be :—

(*a*) To maintain the closest possible contact between the A.S. and the Executive Committee of I.U.S., and the I.U.S. Commissions and Faculties.

(*b*) To be responsible for the archives and files of the A.S.

(*c*) To undertake such other activities as may be requested by the members of the A.S., and which are compatible with the aims of the Architectural Section.

11. Should the Chairman at any time be unable to carry out his obligations to the A.S., then the Secretary shall assume his responsibilities until the election of a new Chairman.

12. The financial basis of the Architectural Section shall be decided at a later date in co-operation with the Executive Committee of I.U.S., but in the meantime the A.S. shall raise funds for its activities on its own initiative.

13. Rules of procedure, elections, voting, etc., of the A.S. shall be based on the Constitution and bye-laws of the I.U.S.

Mr. Donald Barron, a delegate of Great Britain, was elected chairman, and Mr. Lauerman, proposed by the Czech Architecture Student Society, was elected secretary. They will be assisted by the following sub-committees :—

1. *Sub-committee for Information*
2. *Sub-committee for Professional and Cultural Activities*
3. *Sub-committee for Publications*
4. *Sub-committee of Architectural Student Exchange*

We hope these proposals will be accepted by the Congress. They will enable us, as a result of the contacts established there, to work efficiently as a constituent part of I.U.S. in the general interests of architectural students throughout the world.

L. F. CAVE

Students' Competition

Arch.S.A. are holding a competition for a headpiece design for this Schools and Students Page. Prize one guinea (half by Arch.S.A. and half by the JOURNAL). Closing date 13 January. Send designs to *Arch.S.A. News*, 26 Abercromby Square, Liverpool. Assessor : the Editor, R.I.B.A. JOURNAL.

Student Exchanges

Work towards next year's Arch.S.A. Student Exchange Scheme has already begun. Negotiations for exchanges with Canada, Sweden, Finland and Czechoslovakia have already been opened by the Arch.S.A. Travel Secretary, Jack Paul of the Bartlett Centre. Contact has also been made with Dutch architectural students who are anxious to co-operate in such a scheme.

NOTES FROM MINUTES OF THE COUNCIL

MEETING HELD 12 NOVEMBER, 1946

The Honorary Corresponding Membership

The Secretary reported that M. Paul Vischer had accepted nomination to the Honorary Corresponding Membership.

Appointments

A.R.C.U.K. : Mr. H. V. Lobb [*F.*] (in place of Mr. R. Gordon Brown [*A.*])

Managing Committee of the British School of Archæology at Athens : Mr. H. M. Fletcher [*F.*].

Royal Sanitary Institute and Sanitary Inspectors' Examination Joint Board : Mr. F. M. Cashmore [*F.*] (in place of Mr. P. V. Burnett [*F.*]).

Society of Women Housing Managers—Annual Conference : Miss J. G. Ledeboer [*A.*].

B.S.I. Technical Committee SFE/22 : Closed Stoves : Mr. J. A. Pinckheard [*A.*].

Institution of Mechanical Engineers : Centenary Celebrations 8-13 June 1947

Mr. L. H. Keay, O.B.E., President R.I.B.A., has been appointed to act as R.I.B.A. Delegate to the Centenary Celebrations of the Institution of Mechanical Engineers, to be held in June 1947.

Architecture Bronze Medal : Nottingham, Derby and Lincoln Architectural Society

Mr. J. Stockdale Harrison [*F.*] (Leicester) has been appointed the R.I.B.A. representative on the Jury to be appointed in connection with the award of the Architecture Bronze Medal in the area of the Nottingham, Derby and Lincoln Architectural Society.

R.I.B.A. Annual Dinner, 1947

The R.I.B.A. Annual Dinner is being revived in 1947, and a small committee has been formed to make the necessary arrangements.

R.I.B.A. Annual Conference, 1947

The Council have accepted the invitation of the Royal Institute of the Architects of Ireland to hold the R.I.B.A. Annual Conference in 1947 at Dublin.

Control of the External Appearance of Buildings

It was agreed to set up a small committee, composed of representatives of the R.I.B.A. and the Council for the Preservation of Rural England, with the following terms of reference :—

1. To examine and report on existing powers of control, the manner in which they are exercised and the extent to which they fulfil or fall short of the requirements of Planning Authorities.

2. In the light of this examination and of past experience to report on what amendments to existing legislation are necessary to provide architectural service to Planning Authorities on a more practical footing, such proposals to be defined and methods of carrying them out clearly outlined.

Membership

The following members were elected :— As Associates : 2.

Election 14 January 1947

Applications for election were approved as follows :—
As Honorary Corresponding Member : 1. As Fellows : 4. As Associates : 23. As Licentiates : 16.

Election 11 March 1947

Applications for election from Overseas Candidates were approved as follows :— As Fellows : 2. As Associates : 7.

Application for Reinstatement

The following application was approved :—
As Associate : Eric Anthony Ambrose Rowse.

Resignations

The following resignations were accepted with regret :—
John Ernest Newberry [*F.*]. Ian Buchan Fell [*A.*]. John Frank Schofield [*A.*]. Percy Roy Wilson [*A.*]. David Benjamin Philip Edward Davies [*L.*]. John Stirling Jarvie [*L.*].

Applications for Transfer to Retired Members' Class under Bye-law 15

The following applications were approved :—
As Retired Fellows : Alfred Foster, Rudolph Arthur Landstein, John Thomas Mair.
As Retired Associates : Hayward Lewis Samson, David Williams.
As Retired Licentiates : Alfred Rangeley, James Edward Stott, George Henry Treacher.

Obituary

The Secretary reported with regret the death of the following members :—

The Rt. Hon. Lord Howard de Walden and Seaford [*Hon. F.*].

Charles Richard Bayly Godman [*F.*].

William Harding Thompson, M.C., P.P.T.P.I. [*Retd. F.*].

Mr. Harding Thompson was a past Hon. Secretary of the Town Planning and Housing Committee, had acted for many years as an Examiner, and had also served on the Art Committee, Aerodromes Committee, Examinations Committee, Prizes and Scholarships Committee, Thames Bridges Conference, Control of Elevations Joint Committee and the A.R.C.U.K. Board of Architectural Education.

Henry Francis Kerr [*Retd. A.*].

Mr. Kerr was a past President of the Edinburgh Architectural Association.

William Fielding [*L.*].

BOOK REVIEWS

The New Plan for the City of London. A summary of the interim proposals by C. H. Holden [*F.*]. and W. G. Holford [*A.*] 4to. pp. 12. London: The Architectural Press. 1s.

REVIEWED BY W. R. DAVIDGE [*F.*]

This is an excellent summary in brochure form of the proposals of Dr. C. H. Holden and Professor Holford for the City of London.

The first step in the reconstruction of our ancient City has at last been entrusted to the capable hands of two of our best known architects, and the first results are in every way satisfactory. The production of a worthy up-to-date and efficient commercial centre for the capital City of the Empire is a matter of vital interest to us all, and the Improvements and Town Planning Committee of the City Corporation have a responsibility and an opportunity not possessed by any of their predecessors since the Great Fire of 1666.

Full use has been made by the planners of the extensive damage and the new road proposals are moderate, common sense and restrained in their general effect. The City will still be the City as we knew and loved it, but many of the difficulties and congestions will be removed and many of the old beauties restored and improved.

Cheapside, the old backbone of the City, is hopelessly overcrowded and traffic relief must be provided by parallel routes where possible. The need for a "special route" from Holborn Circus passing by a northern Holborn Viaduct over Smithfield Market to Aldersgate and Liverpool Street has long been agreed.

The war damage has also prepared the way for an intermediate east and west road, continuing London Wall from Moorgate to Aldersgate, although its projected extension westwards passing south of St. Bartholomew's Hospital is still barred by important existing buildings. With a widened Old Bailey and the use of a widened Carter Lane and Cannon Street, it will ultimately be possible to provide an inner ring road within the City, which should prove of immense benefit in the distribution of vehicular traffic. This proposal also provides the possibility of an increased precinct for St. Paul's Cathedral, southwards to Carter Lane and northwards to Paternoster Row, leaving the upper end of Ludgate Hill solely as a ceremonial approach to the great Cathedral. This hardly accords with the statement that "little change would be involved in the size and character of the actual precinct."

Further relief to Cheapside would be provided by a new street east of St. Paul's linking up Newgate Street and Cannon Street, opening up what is probably one of the best views of the great dome.

From a new roundabout at Blackfriars (including the site of Blackfriars Station), Upper Thames Street is to be widened to 100 feet throughout and Lower Thames Street as far as its projected termination in Byward Street, near the Tower.

On the riverside itself, the plan suggests that the building line should be extended further into the river with a pedestrian terrace at second floor height along at least a part of the river front. When one remembers that the "New Key" of Sir Christopher Wren did for a century and a half provide a public walk 40 feet in width through the whole riverside front of the City, this seems a very modest and reasonable proposal. The ultimate continuation of the Thames Embankment through the City must not again be blocked by buildings jutting out into the river. One strip of public open space at wharf level is provided on the southern axis of St. Paul's, but considerably smaller than on any previous proposal.

Relief to the north and south traffic will be provided by a new road in the war-damaged area between Moorgate and Aldersgate, curving south-west from Finsbury Pavement along the west side of the extended Guildhall, crossing Gresham Street and Cheapside and joining Cannon Street at a New Square on the site of the Mansion House Station. Traffic could cross the river either by Southwark Bridge or Blackfriars Bridge and if later on a new bridge is built, it could well link up with this route. It will be seen that no direct relief is afforded to Bishopsgate Street and Gracechurch Street, but, so far as through traffic is concerned, this will eventually be provided by the County of London proposal for the "A" ring road.

The widening of the streets in the relatively undamaged eastern section of the City is proposed by the setting back of pavements under arcades where this is the only practical method of securing a widened carriageway within a reasonable time.

The need for improved street junctions and crossings will require further study, and it may well be that some form of underpass will have to be provided where there is one continuous stream of traffic crossing another, but such details are matters for a later report. The Bank crossing where seven important roads now converge is an object lesson in itself of what not to do. King William Street, Princes Street and Queen Victoria Street are all new street improvements made by previous generations, but in this case the presence of the underground station rules out any possibility of an underpass. The authors prefer to reserve their judgment before making definite recommendations, but they quite rightly emphasise the need to discourage unnecessary traffic at this point.

The authors' conception of use-zoning for the City of London is that "apart from the Inner and Middle Temples, St. Bartholomew's Hospital and the historic buildings, the whole area forms one commercial zone—the central commercial zone of London. It follows that other uses, whether residential or industrial, are special uses, even when essential to commercial operations." The proposal is to establish three main zones, an Office Zone, a Warehouse Zone and a Zone of Combined Office and Warehouse buildings, together with a Special Building Zone to include such buildings as the wholesale markets, etc. There should, in the opinion of the authors, be no residential neighbourhoods as such.

Leadenhall Market and the Central Market at Smithfield will remain, the latter in a more restricted form, but Billingsgate the authors hope will eventually be transferred elsewhere.

The height of buildings is rather lightly treated. "The City Churches should not be overwhelmed by new office buildings. Some deference should be paid them by contiguous structures." Although much is said of occasional views of St. Paul's there is no general proposal to limit the height of such buildings as the Post Office Telephone Exchange. It is in fact "suggested that subject to architectural control, especially in the neighbourhood of historic buildings, and subject also to control of floor space over a given site area, the present maximum building height of 100 feet should be waived." "Subject to these controls, it is suggested that liberty of expression should be given to architects to interpret their clients' needs in their own way." Architects will like this, but will naturally ask what is meant by architectural control and by whom?

It will be agreed that either of the distinguished architects, if they were given the power to control the general skyline of the City and were granted sufficiently long life, could achieve a magnificent result, but any prospect of St. Paul's being blocked out by high buildings as seen from the river or any other viewpoint would be distinctly disconcerting. The Royal Fine Arts Commission will no doubt do their best, but the ultimate power and responsibility are with the City Corporation.

The buildings that have yet to be erected will be by architects many and various. These will be the outward and visible sign for all to see and it is on these that they will be judged, however skilful the ground plan.

We look forward with eager anticipation to the continued association of the authors of the report with the City Corporation and with full confidence of a successful result.

Industrial Art Explained. John Gloag. 4to. pp. 248, plates 49. London: George Allen & Unwin. Price 15s.

REVIEWED BY JOHN GREY [*F.*]

This is a revised edition of a book first published in 1934 which has been largely rewritten and contains much new and up-to-date material. Fittingly enough, it is dedicated to the late Mr. Frank Pick, the greatest patron of industrial art of this century, who "employed designers in a completely matter of fact and normal way in the ordinary course of his work as a responsible business executive."

John Gloag is also a business man and in that fact lies his special authority to speak on these matters and the great value of his work, for one of the main difficulties in putting across industrial design in this country arises from the suspicion with which artists have come to be regarded by business men, and until this suspicion can be broken down and the designer recognised as a normal and essential technician there can be little real progress.

In this book the story is told of how this suspicion arose and it must be admitted that no small share of the responsibility for it must be borne by architects. It was a tragic circumstance that the Gothic Revival and "battle of the styles" should have coincided with the formative years of the Industrial Revolution. Had it not been for this the intellectual clarity of the Renaissance tradition might have done much to keep the development of machine production on the rails. Instead of this the architect acquired the reputation of being the man who added the frills, or a sort of camouflage artist. Mr. Samuel Sidney, writing in 1851, complains: "Why are our architects so inferior to our engineers?" and in speaking of the St. Pancras Hotel in 1872 Mr. John T. Emmett, himself an architect, says: "The architect is thus a more expensive rival of the company's head cook in catering for the low enjoyment of the travelling crowd."

But if the decline in industrial design was partly due to the influence

of the architect, there is a brighter side to the picture in that its recent signs of improvement are also largely due to his precept and example. With the birth of the functional movement and its widespread influence on architectural training and practice the architect found himself technically well equipped to enter the field of industrial design and the progress of those who did so has been considerable. Since World War I, his influence both direct and indirect has been growing and has gone far to wipe out the earlier blot on the professional escutcheon.

Another strong influence for good has been the work of such voluntary bodies as the Design & Industries Association with their slogan "Fitness for Purpose," The Royal Society of Arts, and recently the Council of Industrial Design, set up by the Board of Trade, who all receive due recognition.

The appendices at the end of the book consist of two interesting papers, one by the well-known American industrial designer, Mr. Raymond Loewy, Hon.R.D.I., and the other by Mr. M. Hartland Thomas, M.A. [*F.*].

There are a large number of well-selected illustrations chosen from all sources, old and new.

Modern Terrace Houses. A. Trystan Edwards. pp. 23. London: Tiranti. 1946. 6s.

REVIEWED BY W. SEGAL.

The controversial nature of the housing problem is brought home to the reader of Mr. A. Trystan Edwards' [*F.*] researches on high density housing which form the subject of his Chadwick Trust publication *Modern Terrace Houses* (John Tiranti, 6s.). In this sometimes rather startling booklet the author rejects the conception of open development as well as the use of the flat for housing families in large towns.

His alternative is the high-density terrace house and the bye-law street, both of which he presents in a new edition based on maximum densities of 200 persons to the acre in accordance with the maximum density of the County of London Plan. His terrace houses of necessity are of the narrow-fronted type; and in some cases the author even suggests frontages of only 11 feet. Thus with rows spaced apart a mere thirty or forty feet Mr. Edwards achieves densities up to 55 houses per acre. Somewhere he mentions an attempt to build up to 80 houses per acre; this the author contends is possible with four-storeyed houses and could be accomplished in spite of present space standards.

The importance of sunlight for dwellings in winter was acknowledged already in the Tudor Walters Report; since then the advantages of this desirable provision have been confirmed by authoritative study groups and committees. Mr. Edwards' terrace houses will get no sunlight in mid-winter; with an angle of obstruction of 30 degrees as against a recommended angle of 18 degrees the sun cannot enter his houses at that season.

Nor will there be many among Mr. Edwards' readers who will readily agree with the psychological aspect of his suggestions. With rows of some 300 feet in length spaced apart some 30 or 40 feet the feeling of enclosure may become overwhelming, the more so as the author proposes to close his streets on either end by decorative arches.

Several objections may be raised against the suggested type plans among which the three-storeyed house predominates. In order to dispense with the back door Mr. Edwards provides for refuse storage in the front porch. Most stairhalls and landings receive only indirect light and the majority of staircases have winders which in view of the reduced amount of available light for the stairhalls are not desirable. In one example there is a top-lit bedroom; in another the third bedroom is under 6 feet wide.

In conclusion it would appear that while Mr. Edwards puts his case firmly and argues with much reason and logic he is attempting the impossible. The advantages of a more compact development and the architectural possibilities of the terrace house are becoming more and more accepted. There is, however, no hope for the small house to compete with the flat in the matter of densities; and in this competition Mr. Edwards' proposals somehow fail to convince in the matter of amenities in the degree that they come close to winning the game for the small urban house.

The Anatomy of the Village. Thomas Sharp. pp. 72. Harmondsworth: Penquin Books. 1946. 2s. 6d.

REVIEWED BY J. BRANDON-JONES [*A.*]

Mr. Sharp has chosen a fascinating subject and deserves our best thanks for giving us an excellent selection of photographs and plans of English villages—the illustrations alone are good value for a half-crown. Perhaps it is unfair to expect more, but when it comes to the text our first reaction of enthusiasm is gradually replaced by a feeling of frustration.

In the first chapter of his book Mr. Sharp says: "A study of the principles of design, whether they were conscious or unconscious, which have given to our English villages their beauty, their charm and their character, may well elucidate principles that will be useful in our new building." We accordingly set out with him, full of hope, on a tour of English villages, but as we approached the end of his book we could not escape an uneasy feeling that the author himself had not after all been able to discover and apply some of the principles that might have emerged from his Anatomy. For instance, his argument in favour of building in "street formation," as opposed to detached or semi-detached houses, is to a great extent undermined by the fact that only a few pages earlier he has shown us not only the classic example of Milton Abbas, but also, in the illustration of Whittington on page 33, "a beautiful example of village character in building," both of them composed—believe it or not—of semi-detached cottages. Why is the contemporary architect and planner so desperately afraid of tackling the semi-detached cottage? Is one of the reasons a half conscious memory of the awful warnings of the danger of "duality" that we all received in our architectural school days?

Our fears for the future are hardly allayed by the illustration of "a modern street of small houses such as would fit well in character in a new or old village," and under the illustration of "planning" and "non-planning" on page 52 the words "the new building shapes are in character" apparently mean "the new building shapes are different from anything else in the village." Perhaps the original village in this case was devoid of character! Indeed, it is extremely hard to fit any consistent meaning to the mystic words "in character" as used in this book. It may be that Mr. Sharp is a disciple of Humpty Dumpty, who once said: "When *I* use a word it means just what I choose it to mean—neither more nor less," but as Alice replied, "The question is, whether you *can* make words mean so many different things."

Recording Britain. Vol. I. 10 in. pp. 223. Geoffrey Cumberlege, Oxford University Press, in association with the Pilgrim Trust. 1946. Price £1 1s.

Ninety-five well-known artists were asked by the Pilgrim Trust to make a pictorial record of the changing face of Britain. Their work, now housed in the Victoria and Albert Museum, is to be reproduced in a series of four volumes arranged in counties, with descriptive notes by Mr. Arnold Palmer. The first volume has recently been published, covering London and Middlesex, Surrey, Berkshire, Buckinghamshire, Hertfordshire and Bedfordshire.

Mrs. [Katharine] Esdaile: War Memorials. Production No. 2. 8vo. pp. 10. n.p.

H. S. Goodhart-Rendel: Church Decoration. Production No. 3. 8vo. pp. 10. n.p.

C. H. Blakiston: Medieval Art in Sussex. Pubn. No. 2. 4to. pp. 10. illus. 8. n.p.

All by Sussex Churches Art Council. 1946.

REVIEWED BY BERTRAM NICHOLLS

The Sussex Churches Art Council owes its origin to its President, the Bishop of Chichester; its function is to restore, as far as may be possible, the old association between the Church and the Artist and Craftsman which produced our English cathedrals and fine old parish churches; and its province may be said to include everything that concerns visual beauty in the Church. It works in close association with the Advisory Committee on Faculties, but the two bodies should be clearly distinguished. A faculties committee tends by its very nature to be mainly concerned with preservation, with the safeguarding of what already exists; the S.C.A.C. is an initiating body. To promote and encourage the employment of artists and craftsmen by the Church, to act in an advisory capacity wherever new work is contemplated and to stimulate an intelligent interest among ordinary men and women in the subject in general and their own parish church in particular—these are the three main branches of the Council's activities.

In pursuance of the third of these aims the Council has recently published three pamphlets, "War Memorials" by Mrs. Esdaile, "Church Decoration" by H. S. Goodhart-Rendel [*F.*], and "Medieval Art in Sussex" by C. H. Blakiston. The two first are simply short pamphlets, the one a timely discussion on the appropriate forms of war memorial, the other a challenging article on the real meaning of decoration as an integral part of, and not as an addition to, the church. The text of Mr. Blakiston's pamphlet is beautifully illustrated and is of particular interest from its tracing of parallels between examples of form and decoration found in Sussex churches and similar examples drawn from a wide area of Europe.

All the pamphlets are noteworthy for good printing and lay-out and all may be obtained from the Hon. Secretary, School of Art, Grand Parade, Brighton.

CORRESPONDENCE

Swiss Architecture

To the Editor, JOURNAL R.I.B.A.

Zürich. 4.10.46.

SIR,—I am moved to write you because of the very great impression the detail and finish in Swiss architecture has made on me, because I have learnt here how this high result is achieved.

I am here lecturing at the invitation of the Swiss Werkbund, and the architects have taken the opportunity to show me their buildings. Yesterday the hospital group of architects took me over the new Zürich hospital, technically beyond compare. They explained to me that they, the architects, had designed everything, in consultation, of course, with doctors, matrons, cleaners, etc. ; basins, door handles, medicine chests, even the door hinges. They say that they found industry offered so little. The infinite trouble they have taken has been rewarding, and a new standard has been set.

I believe Sir Stafford Cripps comes to Zürich next week, and I would much like him to see the hospital, and to realise how this high level has been achieved : not by committees and research groups, but by architects designing with industry for a particular set of needs. The existing controls make such a procedure impossible in England.

Yours faithfully, JANE B. DREW [*F.*].

The Classic Architecture of Southern Turkey

To the Editor, JOURNAL R.I.B.A.

SIR,—Some of the readers of the article in the October JOURNAL on the Classic Architecture of Southern Turkey—and possibly the author himself—may be interested to know that the antiquities of Corycus in Cilicia, and of certain neighbouring sites are described at some length in vol. IV of the *Monumenta Asiae Minoris Antiqua* (Manchester University Press, 1931). They will find there an admirable map of the whole district, as well as a detailed survey of the site of Corycus, together with a large number of excellent photographs.

This work (in German) is by two distinguished Austrian archæologists and epigraphists, Professors Josef Keil and Adolf Wilhelm, who explored the district in 1914 and again in 1925, and give a detailed account of the famous Corycian Cave and of many other features of the site, besides printing a full transcript of the inscriptions on the almost countless grave-monuments, many of which proved to be of Christians.

It should be added that the authors, as is shown by the references that they quote, are fully aware of the active part played by English explorers of this part of Cilicia since Beaufort's *Caramania* first revealed its archæological importance ; among these Theodore Bent's lively account, printed in *Proceedings of the Royal Geographical Society*, 1890, p. 445 ff. is perhaps the most easily accessible to English readers.

Yours truly, ARTHUR M. WOODWARD [*Hon. A.*] (Reader in Ancient History and Archæology, University of Sheffield).

Editor's Note.—Mr. A. M. Woodward's letter was sent to Mr. Duncan Wylson, who replied as follows :

SIR,—Indeed I am interested. Except perhaps at Corycus these remains to-day show little evidence of previous excavation, and there may well be scope for more. There is also a woeful lack of care by the Turks in the preservation of these things which foreign interest has shown to be of archaeological importance.

Yours faithfully, DUNCAN WYLSON [*A.*].

Furniture Designed by Charles R. Mackintosh

To the Editor, JOURNAL R.I.B.A.

SIR,—In the September R.I.B.A. JOURNAL appear two pages of illustrations of furniture designed by the late C. R. Mackintosh.

While I disclaim any desire whatever to belittle the work of one who certainly did not lack originality, it seems to me that most of the designs are impractical in the extreme and in very doubtful taste. I question whether it was desirable to publish these photographs at all and particularly at the present time when many students are entering the profession.

Yours faithfully,

E. C. FRANCIS [*F.*].

Editor's Note.—Mr. Francis's letter was sent to Mr. Howarth, who replied as follows :

SIR,—The object of Mr. Francis's letter is somewhat obscure and I have difficulty in framing a suitable reply. I cannot believe he seriously considers that the publication of the photographs in question will have an adverse effect on students entering the profession to-day.

However, as an experiment, I have shown them to 43 students at various stages of their course—few of whom had either previously heard of Mackintosh or seen the illustrations! The result was most interesting: even the First Year showed commendable historical knowledge of furniture design and on the whole dated the work easily " art nouveau," " early modern," " late 19th century "—only one small voice volunteered " Britain Can Make It Exhibition "—a great compliment to Mackintosh.

The seniors quickly pointed out the practical disadvantages of some of the designs. All agreed that the work had remarkable originality when considered against the background of the Victorian period, and all were conscious of that strange indefinable quality which characterises so much of the work of the 1890's in literature, painting and decorative arts—often referred to as " *mal du fin de siecle*," and what Mr. Francis probably means by " very doubtful taste." This balanced and highly critical approach is, I think, most encouraging.

Perhaps I can reassure Mr. Francis further by pointing out that the 19th century is now sufficiently remote to be treated historically in the schools; thus the Mackintosh phase can more readily be appreciated and understood.

It is inevitable that some work of the Victorian era maligned by contemporary critics—many of whom are still living—will be viewed in an entirely different light by a later generation. As a period recedes in time we are able to see the general pattern of events more clearly, to relate cause and effect, and to reassess the value of individual contributions. Mackintosh is a case in point as I have discovered again and again when collecting material for his biography—and critics tend to mellow with the years.

Surely Mr. Francis does not wish the Editor to suppress illustrations of a controversial character—especially those of historical interest. As one student aptly said, " You might as well abolish Banister Fletcher " (meaning the book, of course).

Yours faithfully, THOMAS HOWARTH [*A.*].

OBITUARIES

Alfred Morris Butler [*Ret. F.*]

We regret to record the death of Alfred Morris Butler [*Ret. F.*] at the age of 84. He was trained in London and commenced practice in 1893. He became Associate in 1888 and a Fellow in 1908.

He designed a great many houses for private residents in Worthing and the Home Counties. His principal architectural works were offices in High Holborn, the Stroud Green Schools ; the Tottenham School Board Higher Grade Schools, Wood Green ; the Holy Trinity Vicarage, Worthing, and the Mattison Road Schools at Hornsey. He designed the Out-Patients' Department and the Maternity Section, Worthing Hospital ; Broadwater Rectory, Worthing.

Readers may be interested to learn that in his youth Mr. Butler acted as model for the original illustrations by Sidney Paget of Conan Doyle's famous character, Doctor Watson of Baker Street, which appeared in the *Strand Magazine* series of Sherlock Holmes stories.

Lord Howard de Walden [*Hon. F.*]

With the death on 5 November of Lord Howard de Walden [*Hon.F.*] passes away a great patron of the arts and a now almost extinct type of benefactor of artists and the arts with means commensurate to their will to support creative genius and enterprise.

The following appreciation has been contributed by Mr. L. Sylvester Sullivan [*F.*], one of the members of the R.I.B.A. Building Committee which was responsible for the erection of No. 66 Portland Place.

" It is with profound regret that we record the death, which took place on 5 November last, of Thomas Evelyn Scott-Ellis, eighth Baron Howard de Walden and fourth Baron Seaford. Lord Howard de Walden held an Honorary Fellowship of the Royal Institute of British Architects, to which he was elected in 1929. Later he was to become the ground-landlord of the Institute, to which he granted a lease for 999 years, an unusually long and gratifying period for the leaseholders. From the first Lord Howard de Walden displayed a deep interest in the R.I.B.A. and its new building, of which he laid the foundation stone in the foyer of the Henry Jarvis Hall. The Building Committee and members will long remember the little ceremony on that occasion, and value his concern for the worthiness of the Institute's new home

which was afterwards to be opened by our Patron, His Majesty King George V, in the centenary year of our corporate life.

But Lord Howard de Walden was not only a good and wise landlord. He had many other and varied interests. He was a patron of the arts in the widest sense—painting, music and the stage—he took part in the drama both as a librettist and playwright, and made it possible for at least one play to be seen that might not otherwise have been brought to notice in this country, at any rate so soon. In the use of his great wealth he might have belonged to the eighteenth rather than to the twentieth century.

Born in 1880, he had been a soldier serving in the 10th Hussars, and saw service in the South African war and in the war of 1914-18. He was Honorary Colonel of the 22nd (London) Armoured Car Company of the Royal Armoured Corps, the successor to the Westminster Dragoons. He found other interests in athletics and sport such as fencing and falconry. In 1912 he married Margherita (C.B.E.), daughter of the late Charles van Raalte of Brownsea Island, and had five daughters and one son, the Hon. John Osmael Scott-Ellis, who succeeds him. By his death the Royal Institute has lost a distinguished Honorary Fellow and a modest, interested and kindly friend of great character. He was a truly enlightened and notable member of a great family."

MEMBERSHIP LISTS

ELECTION: 12 NOVEMBER 1946

The following candidates for membership were elected on 12 November 1946 :—

AS ASSOCIATES (2)

BEAGLEY : JOHN CLIFFORD, Woollahra, Sydney.

LAUTENBACH : BASIL GEORGE, Cape Town.

ELECTION: 14 JANUARY 1947

An election of candidates for membership will take place on 14 January 1947. The names and addresses of the candidates, with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday, 11 January 1947.

The names following the applicant's address are those of his proposers.

AS HON. CORRESPONDING MEMBER (1)

HITCHCOCK : HENRY-RUSSELL, M.A. (Harvard), Associate Professor of Art, Wesleyan University ; 96 South Main Street, Middletown, Connecticut, U.S.A. Proposed by the Council.

AS FELLOWS (4)

BUDGEN : PERCY GRAHAM [*A.* 1930], Westminster House, 95-97 St. Mary Street, Cardiff ; " Dunkery," Cyncoed Road, Cyncoed, Cardiff. C. L. Jones, Sir Percy Thomas and Sydney Clough.

JURY : ARCHIBALD GEORGE [*A.* 1940], Architect to the Council, Architects' Dept., Taunton ; " Firfield," Elm Grove, Taunton, Som. R. R. Kitching, H. S. W. Stone and R. O. Harris.

PARSONS : LESLIE HARRY [*A.* 1932], Milnwood, North Parade, Horsham ; 30A Aglaia Road, Worthing. C. J. Kay, D. H. McMorran and J. S. Snell.

RUTTER : WILLIAM ARTHUR, O.B.E. [*A.* 1914], Ministry of Works, Abell House, Westminster, S.W.1 ; " Egmont," South Hill, Guildford, Surrey. C. J. Mole, Hubert Worthington and G. C. Wilson.

AS ASSOCIATES (23)

The name of a school or schools after a candidate's name indicates the passing of a recognised course.

BOWNESS : RODGER HAIGH (Leeds Sch. of Arch.), Parkfield, Green Lane, Yeadon, near Leeds. R. S. Shapley, N. R. Paxton, C. Sunderland.

BULMER : ROBERT HAROLD (Arch. Assoc., London), 11 Edwardes Square, W.8. R. F. Jordan, George Fairweather, Richard Sheppard.

CLOUGH : ROBERT TAYLOR (Leeds Sch. of Arch.), " Lynleigh," Utley, Keighley, Yorks. G. H. Foggitt, C. Medley, N. R. Paxton.

COOPER : CECIL JOHN (Victoria Univ., Manchester, Sch. of Arch.), Glengyle, Howth, Co. Dublin. Prof. R. A. Cordingley, F. L. Halliday, J. P. Nunn.

CRISP : RAYMOND MILES (Arch. Assoc., London), Flat 6, Amersham House, Craven Road, W.2. G. A. Jellicoe, David Stokes, George Fairweather.

CURREY : RONALD (Bartlett Sch. of Arch., Univ. of London), 30 Ranelagh Gardens, Stamford Brook, W.6. Prof. H. O. Corfiato, L. S. Stanley, D. W. Aberdeen.

EVANS : ELIZABETH (Miss) (Welsh Sch. of Arch.), Pentwyn, Pentyrch, Cardiff. Lewis John, Sir Percy Thomas, T. A. Lloyd.

GIFFARD : COLIN CARMICHAEL, B.A. [Cantab] (Bartlett Sch. of Arch., Univ. of London), 12 Poultons Square, S.W.3. L. S. Stanley, L. H. Bucknell, Prof. H. O. Corfiato.

HALLAM : ARTHUR (Liverpool Sch. of Arch., Univ. of Liverpool), 13 Crescent Road, Wallasey, Cheshire. Prof. L. B. Budden, J. E. Marshall, Donald Brooke.

HARDY : KENNETH OSWALD WALTER (Northern Poly. (London) Dept. of Arch.), 176 Prince Georges Avenue, Southgate, N.14. T. E. Scott, H. Lidbetter, Edward Britton.

KENYON : JOHN CHRISTOPHER [Final], The School House, Allerton Park, Nr. Knaresborough. G. N. Hill, G. G. Speight, W. G. Walmsley.

KNIGHT : FRANK STEWART (Arch. Assoc. (London), 13 Market Place, Wincanton, Somerset. R. W. H. Vallis, David Stokes, R. F. Jordan.

LINDARS : LESLIE WILLIAM [Final], 44 Glanville Road, Bromley, Kent. J. K. Hicks, G. H. Lovegrove, A. F. Hooper.

LOASBY : ERIC [Final], 23 The Grove, Kettering, Northants. P. J. J. Panter, Charles Riddey and applying for nomination by the Council under Bye-law 3 (*d*).

MACKENZIE : ROBERT WALKER RANNIE (Edin. Coll. of Art, Sch. of Arch.), 336 Colinton Mains Road, Edinburgh, 13. A. G. R. Mackenzie, A. H. Mottram, W. I. Thomson.

MARSDEN : TOM LOWE, B.A. (Victoria Univ., Manchester, Sch. of Arch.), 388 Ripponden Road, Oldham, Lancs. Prof. R. A. Cordingley, F. L. Halliday, J. P. Nunn.

MARTIN : BRUCE (Arch. Assoc. (London), 6 The Terrace, H.M. Dockyard, Chatham. George Fairweather, R. F. Jordan, Charles Aslin.

NOALL : NORMAN MCKIRDY [Special Final], 69 Kirkland Avenue, Barkingside, Ilford, Essex. W. H. Hobday, J. N. Parr, Robt. Cromie.

PRITT : ALBERT [Special Final], 20 Kensington Road, Blackpool, Lancs. C. H. Mackeith, F. L. Lumb, H. T. Jackson.

ROCHE : EAMOUN KEVIN (Univ. Coll., Dublin, Ireland, Sch. of Arch.), 46 Upper Baggots Street, Dublin. J. V. Downes, J. J. Robinson, Vincent Kelly.

SHARP : PETER EDWARD (Nottingham Sch. of Arch.), 6 Patterdale Road, Woodthorpe, Nottingham. George Checkley, T. C. Howitt, F. S. Broadhead.

TICKELL : RICHARD CAXTON (Liverpool Sch. of Arch., Univ. of Liverpool), " The White House," Barnston Road, Heswall, Cheshire. Prof. L. B. Budden, Donald Brooke, J. E. Marshall.

VINCENT : LEONARD GRANGE [Special Final], 40 Sunnymede Drive, Ilford, Essex. T. E. Scott, G. H. Edleston, L. S. Stanley.

AS LICENTIATES (16)

ARNETT : FRANCIS ALBERT ERNEST, 20 North Street, Romford, Essex ; 298 Old Shoreham Road, Southwick, Sussex. Wm. Evans, Harold Mileson, S. P. Dales.

COLEMAN : JOHN NORMAN, " Kaehurst," Horam, East Sussex. P. W. Adams and applying for nomination by the Council under Bye-law 3 (*d*).

COLLIER : EDWIN WALTER, Architects' Dept., L.C.C., County Hall, S.E.1 ; 246 Stoneleigh Avenue, Worcester Park, Surrey. E. G. Bax, R. Wilson, G. W. Home.

CORTIS : WALTER NUGENT, Ministry of Town and Country Planning; Little Barton, Gregories Road, Beaconsfield. Graham Dawbarn, Dr. H. V. Lanchester, J. M. Easton.

JUDGES : ALFRED CHARLES, 1 Hare Court, Temple, E.C.4 ; Rogers View, Chequers Hill, Amersham, Bucks. G. Langley-Taylor, MacDonald Gill, Thomas Rayson.

KNAPP : DOUGLAS ERIC JOHN, 5 Wood Street, Queen Square, Bath ; Glenelg, Bloomfield Road, Bath. J. H. Hollier, E. H. Button, G. D. G. Hake.

LEWIS : KENNETH FRANCIS, Office of Works, Law Courts, Belfast ; 5 Lawrence Street, Belfast, N. Ireland. R. G. Hopcraft, T. R. Eagar, J. R. Young.

MERRIOTT : ALFRED EDWARD, Director of Housing and Valuers Dept., L.C.C., County Hall, S.E.1 ; 18 Norbury Avenue, Thornton Heath, Surrey. J. W. Hepburn, R. Wilson, Edwin Williams.

MICKLEWRIGHT : WILFRED LOUIS, 18 Queen's Road, Brighton, 1 ; " Craigside," Tongdean Lane, Brighton, 5, Sussex. A. J. McLean and the President and Honorary Secretary of the S.E.S.A. under Bye-law 3 (*a*).

PENTELOW : FRANCIS HOWELL, Borough Surveyor's Dept., Town Hall, Weston-super-Mare ; 48 Ashcombe Gardens, Weston-super-Mare, Somerset. Applying for nomination by the Council under Bye-law 3 (*d*).

ROWBOTTOM : STANLEY EDGAR, Architects' Dept., L.C.C., County Hall, S.E.1 ; 35 Orchard Avenue, Southall, Middlesex. W. J. Durnford, G. W. Home, R. Wilson.

ROWELL : MONTAGUE, Borough Engineer's Dept., Finsbury Borough Council, E.C.1 ; 47 Ember Court Road, Thames Ditton, Surrey. F. W. Hagell, H. S. Sawyer, Edward Hastie.

SHARPE : KENNETH LESLIE, Architects' Dept., L.C.C., County Hall, S.E.1 ; 158 Lynmouth Avenue, Morden, Surrey. R. Wilson, W. J. Durnford, G. W. Home.

SMITH : CHARLES GEORGE WILLIAM, Architects' Dept., L.C.C., County Hall, S.E.1 ; 15 Crosby Road, Westcliffe-on-Sea, Essex. C. E. Simmons, Edwin Williams, B. H. Toms.

WATTIE : JAMES, Borough Engineer's Dept., Lambeth Town Hall, Brixton Hill, S.W.2 ; 38 Harewood Road, Bedford, Beds. B. George, R. Wallace-Bateman, Edgar Ranger.

WOOD : THOMAS EDWARD, 37 West Street, Brighton, 1 ; 65 Southall Avenue, Brighton, 7, Sussex. K. E. Black, C. L. Clayton, S. C. Garrett.

ELECTION : 15 APRIL 1947

An election of candidates for membership will take place on 15 April 1947. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday, 29 March 1947.

The names following the applicant's address are those of his proposers.

AS FELLOWS (2)

PARELKAR : SHANKERRAO HARISCHANDRA [*A.* 1933], Medows House, Medows Street, Fort, Bombay ; "Sita Sadan," Keluskar Road, Shivaji Park, Dadar, Bombay. Claude Batley, B. S. J. Aga and D. W. Ditchburn.

SWAYNE-THOMAS : GEOFFREY, M.A. (Cantab.) (Lieut.-Col. R.E.) [*A.* 1934], C.R.E. Factories, 6 Esplanade East, Calcutta ; 2 Pretoria Street, Calcutta. Bernard Matthews, B. B. Lewis and M. H. Thomas.

AS ASSOCIATES (7)

BURMAN : ARTHUR BERNHARDT LEWIS [Passed a qualifying Exam. approved by the I.S.A.A.], 24 "Lhenveolan," Killarney, Johannesburg. Applying for nomination by the Council under Bye-law 3 (*d*).

GERRAND : DAVID, B.Arch.(Rand) [Passed a qualifying Exam. approved by the I.S.A.A.], "Conville," P.O. Aliwal North, South Africa. Applying for nomination by the Council under Bye-law 3 (*d*).

GORE : WAMAN SADASHIV [Final], c/o Sadashiv Govind Gore, 396/1 B, Sadashiv Peth, Poona, 2, India. C. M. Master, S. S. Reuben, B. E. Doctor.

KORNER : ERNEST [Passed a qualifying Exam. approved by the R.A.I.A.], 67 Wyong Road, Cremorne, N.S.W., Australia. Prof. A. S. Hook, Prof. Leslie Wilkinson, B. J. Waterhouse.

MUTTON : LESLIE [Passed a qualifying Exam. approved by the R.A.I.A.], 36 Pacific Street, Bronte, Sydney, Australia. J. L. S. Mansfield, J. C. Fowell, C. C. Ruwald.

SINGER : KURT HERMANN [Passed a qualifying Exam, approved by the R.A.I.A.], 10 Girilang Avenue, Vaucluse, N.S.W. Prof. A. S. Hook, W. R. Richardson, B. J. Waterhouse.

WEST : ALAN ERNEST STEPHEN [Passed a qualifying Exam. approved by the R.A.I.A.], 31 Cecil Street, Kew, Melbourne. P. H. Meldrum, J. F. D. Scarborough, C. E. Serpell.

MEMBERS' COLUMN

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than for posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

MR. CLARENCE BACON [*A.*], Chief Architectural Assistant to the City Engineer, Lincoln, has been appointed Housing Architect to the Taunton Borough Council. His private address for trade catalogues etc., will be 68 Elm Grove, Taunton, Somerset.

MR. N. EDGAR [*A.*], Chief Assistant Architect, Borough Surveyor's Office, Tynemouth, has been appointed Chief Assistant Architect to the City Education Architect, Newcastle-upon-Tyne.

MR. WILFRED E. EDLESTON [*A.*] has been appointed Architect to the South African Breweries, Ltd., and will be pleased to receive trade catalogues, etc., c/o South African Breweries, Ltd., P.O. Box 1099, Johannesburg, South Africa.

MR. H. GILLESPIE [*A.*] has been appointed Head of the Building Department (Kent Education Committee, Bromley School of Art), Wharton Road, Bromley, Kent, and will be pleased to receive trade catalogues, etc., at that address.

MR. W. ROY HURRY [*A.*], until recently a member of the staff of the County Architect's Department, The Castle, Winchester, has been appointed Assistant County Architect to the Isle of Wight County Council, County Hall, Newport, I.o.W.

MR. JOHN OSBORNE [*L.*] has relinquished his appointment as Senior Architectural Assistant to the Metropolitan Borough of Shoreditch and has for reasons of health accepted an appointment with the Hungerford Rural District Council. His address for trade catalogues, etc., is Council Offices, 128 High Street, Hungerford, Berks.

MR. E. F. PEAT [*A.*], having been appointed Architect to the firm of E. S. & A. Robinson, Ltd., of Bristol, will be pleased to receive trade catalogues, etc., c/o E. S. & A. Robinson, Ltd., Bristol, 1.

MR. S. T. C. REEKS [*A.*] has been re-appointed by the Sudan Government to be Deputy Chief Architect to the Public Works Department. His address will be c/o P.W.D., Khartoum, Sudan.

MR. G. ROBSON [*F.*] has been appointed County Planning Officer to the Joint Planning Committee for Northumberland.

MR. F. V. SCOTT [*A.*] (late Major) has relinquished his appointment as Chief Architectural Assistant, Torquay Corporation, and has been appointed Architect, Ministry of Health, Regional Offices, Bristol, at which address he will be pleased to receive trade catalogues, etc.

MR. A. L. TAMKIN [*A.*] has been appointed Staff Architect to the Milk Marketing Board, Thames Ditton, Surrey, and will be pleased to receive trade catalogues, etc.

MR. W. M. WOODHOUSE, M.A. [*A.*] has been appointed by the Colonial Office to be Building Research Adviser to the Comptroller for Development in the West Indies. He expects to leave the U.K. in January 1947, but until then his address for trade catalogues, etc., is "Oxton." Bramley, Guildford, Surrey.

PRACTICES AND PARTNERSHIPS

MR. JOSEPH ALDRIDGE's [*L.*] correct address is 472 Eastern Avenue, Ilford, Essex (Valentine 4307), and *not* as printed in the new edition of the R.I.B.A. Kalendar.

MR. ERIC AMBROSE [*F.*] and MR. D. NIGHTINGALE [*F.*] will practise under the style of Nightingale & Ambrose at 27 John Adam Street Adelphi, London, W.C.2.

MR. H. STRATTON DAVIS [*F.*], who was Deputy Director of Works and Buildings to N.A.A.F.I. during the war, has returned to the practice of Stratton, Davis & Yates, 12 Queen Street, Gloucester (Gloucester 2409), and Mr. D. Stratton Davis [*A.*] (late R.E.) has joined that firm. The practice will continue under the style of Stratton Davies & Yates.

MISS EDNA MOSELY (MRS. KNOTT) [*A.*] points out that her address is 80 Edith Grove, Chelsea, London, S.W.10 (Flaxman 4787) and *not* as stated in the new edition of the R.I.B.A. Kalendar.

MR. FREDERICK T. ORMAN [*A.*] (late Lieut.-Col. R.A.) has dissolved partnership with the firm of Seymer, Orman & Adie, Sackville Street, London, and has resumed practice as Frederick T. Orman [*A.*] at Quarry Hill House, Quarry Street, Guildford, Surrey (Guildford 5024), where he will be pleased to receive trade catalogues, etc.

MR. KEVIN GRAHAM's [*A.*] correct postal address is "Kentdale," Kingsway Avenue, Broughton Village, Preston, Lancashire, and *not* as printed in the new edition of The R.I.B.A. Kalendar.

THE address of Mr. Frank Dowdeswell [*F.*], which was inadvertently omitted from the new edition of the Kalendar, is : 140 Sussex Way, Cockfosters, Barnet, Herts.

THE Architect section of the Building Research Station would be pleased to receive trade catalogues and trade literature, which should be addressed to the Building Research Station, Garston, Watford, marked for the attention of Mr. S. Meyrick [*A.*].

CHANGES OF ADDRESS

MR. H. CLIFFORD BLOOMER [*A.*] and MR. W. N. HAWKES [*A.*], who practise with Mr. Harry Bloomer under the style of Harry Bloomer & Son, have removed from 14 Temple Street, Birmingham, to 73 Hagley Road, Five Ways, Birmingham, 16 (Edgbaston 3691).

MR. F. V. SCOTT CHARD [*A.*] has removed to 19 Woodlands Road, Tyndalls Park, Bristol, 8.

MR. L. W. COOK [*A.*] (late F/Lt., R.A.F.), on release from the Services, has removed from Woodinansterne Lane, Wallington, to 8 Manor House, Wallington, Surrey.

MR. J. C. GILL [*A.*] has removed from "The Nook," Bee Lane, Penwortham, Preston, to "Langholme Bridge," Woodgate, near Ulverston.

MR. NORMAN HAVERS [*S.*] has removed to 59 Llandennis Road, Roath Park, Cardiff.

MR. HAROLD R. HOOPER [*A.*] notifies that the firm of Harold R. Hooper & Olley have removed from 4 Butter Market, Ipswich, to 9 Museum Street, Ipswich (Ipswich 3661), where they will be pleased to receive trade catalogues, etc.

MR. S. JAMES HURD [*A.*], practising with Mr. Edwin W. Squire as Hurd & Squire, has removed to 79 Merrion Square, Dublin (Dublin 63346).

MR. F. W. MACKENZIE [*L.*] has removed from 29 St. George Street, Hanover Square, London, W., to 11 Old Bond Street, London, W.1 (Regent 3900), and will be pleased to receive trade catalogues, etc.

MR. GEOFFREY J. MONRO, B.Sc. [*A.*], practising as James H. Monro & Son, has removed from Hill Farm, Leavesden, and has acquired permanent premises at 11 Old Queen Street, London, S.W.1 (Whitehall 7237) and 32 Clarendon Road, Watford, Herts (Watford 5837-9), where they will be pleased to receive trade catalogues, etc. The Glasgow office remains at 307 West George Street, Glasgow, C.2 (Central 5628).

MR. E. WILLIAM PALMER [*F.*] has removed from 15 Queen Anne's Grove, Bush Hill Park, Enfield, Middlesex, to 8 The Town, Enfield (Enfield 2272), and the practice will now be styled E. William Palmer & Partners.

MR. A. DOUGLAS ROBINSON [*F.*] has removed from Hanover House, 14 Hanover Square, London, W.1, to 20 Warwick Road, Earl's Court, London, S.W.5.

MR. DANIEL ROTH [*A.*] has removed from 7 Belsize Crescent, London, N.W.3, to 27 Withern Avenue, Higher Bebington, Cheshire.

MR. A. LLEWELLYN SMITH, M.B.E. [*F.*] and MR. A. B. WATERS, M.B.E., G.M. [*F.*], practising under the style of Llewellyn Smith & Waters, have removed from 17 Bedford Square, W.C.1, to 103 Old Brompton Road, South Kensington, S.W.7 (Kensington 8641 and 6428), where they will be pleased to receive trade catalogues, etc.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

ASSOCIATE (32) desires partnership in London practice, S.W. district or Kent preferred.—Apply Box 345, c/o The Secretary, R.I.B.A.

ASSOCIATE (33) seeks progressive partnership, well trained, energetic, wide experience in schools, housing, flats, conversions, war damage, etc.—Apply Box 339, c/o The Secretary, R.I.B.A.

ASSOCIATE, with 20 years' varied experience, seeks appointment with view to partnership.—Apply Box 346, c/o The Secretary, R.I.B.A.

PARTNERSHIP FOR SALE, owing to retirement of a partner. Old-established busy West Country practice.—Apply Box 333, c/o The Secretary, R.I.B.A.

FELLOW requires Associate as junior partner in established and busy London practice.—Apply Box 332, c/o The Secretary, R.I.B.A.

WANTED AND FOR SALE

MEMBER wishes to purchase "Development of Private Building Estate," J. Hawkins; "Site Planning in Practice," F. L. Thompson; and "Architectural Design and Construction," June to October 1944 (inclusive).—Apply Box 348, c/o The Secretary, R.I.B.A.

FOR SALE. Leather bound, copiously illustrated (1) "A Parallel of the Ancient Architecture with the Modern," John Evelyn. MDCCXXXIII. (2) "The Architecture of A. Palladio," Giacomo Leoni (translated from Italian). MDCCXXI (4 books in two volumes). Offers over £5.—Apply Box 336, c/o The Secretary, R.I.B.A.

FOR SALE. Retiring member has mahogany box of drawing instruments by Stanley (13 pieces and ancillaries), mahogany double-elephant T square and drawing-board. 21 guineas, or separately.—Apply Box 338, c/o The Secretary, R.I.B.A.

FOR SALE. "Town Planning in Practice," by Raymond Unwin, 1909.—Apply Box 347, c/o The Secretary, R.I.B.A.

WANTED BY MEMBER. Two plan chests, D.E. drawing boards and tee square and two sets of 6 in. drawing instruments (Stanley's make preferred); also precision level.—Apply Box 342, c/o The Secretary, R.I.B.A.

ACCOMMODATION

ACCOMMODATION required by member (ex Naval officer) now commencing private practice; one or two-roomed office in central London, preferably Bloomsbury area.—Apply Box 344, c/o The Secretary, R.I.B.A.

ARCHITECT'S WIDOW has office accommodation, ground floor furnished, available on bus route at Blackheath, S.E.3. Telephone; cooked meals arranged if desired.—Apply Box 340, c/o The Secretary, R.I.B.A.

ASSOCIATE, with small office in Lincoln's Inn Fields, wishes to let it to member starting in practice. Rent £30, inclusive of services and telephone.—Apply Box 349, c/o The Secretary, R.I.B.A.

FELLOW, sharing with quantity surveyor, requires London office, two or more rooms.—Apply Box 341, c/o The Secretary, R.I.B.A.

OFFICE ACCOMMODATION required by provincial firm in London, S.W. or W.C. areas preferred.—Apply Box 334, c/o The Secretary, R.I.B.A.

PRACTISING ASSOCIATE, now in temporary offices, requires office accommodation in West End or three miles radius. Requirements: private office, drafting room for four assistants and secretary's office. Willing to share with another member, including secretarial staff.—Apply Box 337, c/o The Secretary, R.I.B.A.

PROVINCIAL MEMBER requires office in London: modern building, 500 to 700 square feet.—Apply Box 343, c/o The Secretary, R.I.B.A.

MEMBERS RELEASED FROM THE SERVICES, ETC.

The following members have notified the R.I.B.A. that they have been released from the Services and are resuming practice and would be pleased to receive trade catalogues, information sheets and other data, etc.:—

MR. S. R. EDWARDS [*L.*], 6 Princess Square, Plymouth.

MR. M. RAINSFORD FLETCHER [*L.*] (late Capt. R.E.), 13 Ambrose Place, Worthing (Worthing 1125).

MR. H. J. GROSE [*A.*] (late Lieut.), 1 Marlborough Mansions, Canon Hill, London, N.W.6 (Hampstead 4281).

MR. R. D. HAMMETT [*A.*] (late Major R.E.), 9 Genoa Avenue, Putney, London, S.W.15.

MR. H. JOHN HITCH [*A.*], Colburn House, St. George's Place, York.

MR. CHARLES JAMES JERRAM, D.S.O., D.S.C. (and bar) [*A.*], Messrs. Donald Hamilton, 50 Portland Place, London, W.1. Private address (for trade catalogues, etc.), "Flatford," 25 Meadway, Gidea Park, Essex.

MR. C. KENDALL [*A.*] (late Major R.E.), Bank Street, Ossett, Yorkshire (Ossett 293).

MR. HARRY LIND [*A.*], 36 Queen Anne Street, Dunfermline (Dunfermline 16).

MR. S. G. ROFF MARSH [*A.*], Moulsham Thrift, Chelmsford, Essex (Chelmsford 2398).

MR. J. M. MAXWELL, M.B.E. [*A.*], 24 Dean Street, London, W.1.

MR. C. A. RICHARDS [*A.*], 115 Beaufort Street, Chelsea, London, S.W.3 (Flaxman 2605).

MR. W. F. STEWART [*A.*], "Parkside," Beaconsfield, Buckinghamshire.

MR. EDWARD CLOUGH TASKER [*F.*], Falconer Chambers, Huntriss Row, Scarborough, Yorkshire.

MR. L. TATTERSFIELD [*L.*] (late Lieut.-Col. R.E.), "Celarm," Rose Avenue, Retford (Retford 252). He has resumed his appointment as Architect and Housing Officer to the East Retford Rural District Council.

MR. CHARLES ASHTON WALLER [*L.*], 26 Temple Street, Aylesbury, Bucks. (Aylesbury 819).

MR. H. WYLIE [*A.*], 29 Barnton Gardens, Davidson's Mains, Edinburgh, 4.

"A.B.S."

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